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Utah State Agricultural College

LOGAN, UTAH

CATALOGUE ISSUE - 1942-1943

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UTAH STATE AGRICULTURAL COLLEGE BULLETIN

CATALOGUE ISSUE

1942-1943

Published by the College

1942

LOGAN, UTAH

To those loyal and patriotic men and women who are giving and have given their all to preserve the American way of life, this volume is sincerely dedicated.

1942

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26	27	28	29	30	31	

TABLE OF CONTENTS

	Page
College Calendar, 1942-43	7, 10
Administration	11
Board of Trustees	11
Officers of Administration	12
Instruction Faculty	13
Standing Committees	21
Experiment Station Staff	23
Extension Service Staff	27
Branch Agricultural College Faculty	31
Introduction	33
General Information	34
Divisions of the College	44
Agricultural Experiment Station	44
Engineering Experiment Station	45
Extension Service	46
Summer Session	47
Correspondence Study	48
Branch Agricultural College	49
The College Proper	49
Admission	49
Junior College	53
Senior College	55
Graduation	56
Graduate Study	59
Student Expenses	65
Scholarships and Awards	68
Student Organizations	72
School of Agriculture	75
Agriculture	80
Agricultural Economics and Marketing	81
Agronomy and Soils	84
Animal Husbandry	88
Bacteriology and Biochemistry	90
Botany and Plant Pathology	92
Dairy Husbandry and Manufacturing	94
Horticulture	97
Landscape Architecture	98
Poultry Husbandry	101
Vegetable Crops	102
Veterinary Science	102
School of Arts and Sciences	103
Bacteriology and Biochemistry	106
Botany and Plant Pathology	108
Chemistry	110
English	113
Journalism	117
Geology	118
History	120
Mathematics	121
Modern Languages and Latin	122
Physics	125

TABLE OF CONTENTS

	Page
Physiology, Public Health and Hygiene	128
Speech	129
Zoology and Entomology	133
School of Commerce	139
Agricultural Economics and Marketing	142
Business Administration	144
Accounting	146
Business Administration	147
Merchandising	148
Economics	150
Political Science	153
Secretarial Science	155
Sociology	160
School of Education	169
Art	171
Education	174
Elementary Education	174
Secondary Education	176
Vocational Education	178
Administration and Supervision	179
Library Science	179
Graduate Work	181
Music	182
Physical Education	186
Psychology	191
School of Engineering, Industries and Trades	195
Engineering Division	197
Agricultural Engineering	198
Civil Engineering	201
Industrial Division	207
Aeronautics	207
Automotive	211
Metalwork and Mechanical Drawing	216
Radio	218
Woodwork and Building Construction	222
Industrial Education	224
School of Forestry	229
Forest Management	232
Range Management	235
Wildlife Management	238
School of Home Economics	241
Child Development and Parental Education	244
Foods and Nutrition and General Home Economics	247
Textiles and Clothing	250
Military Science and Tactics	255
Basic Courses	259
R. O. T. C. Band Courses	260
Advanced Courses	260
Forty-ninth Annual Commencement	261
Awards and Honors—1941-42	265
Summary of Attendance	267
Index	269

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Assistant Professor of Physics

Hayward, Ira N., B.S., Ph.M.,
Assistant Professor of English

Henderson, W. W., B.A., M.A., Ph.D.,
Professor of Zoology and Entomology

Hendricks, King, B.S., M.A., Ph.D.,
Associate Professor of English

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Collaborator in Teacher Training

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Assistant Professor of Textiles and Clothing

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Professor of Agricultural Education

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Jensen, George C., A.B., M.A.,
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*On leave.

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Jones, Lewis W., B.S., A.M.,
Assistant Professor of Bacteriology

Kelker, George Hills, A.B., B.S., M.S.,
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Professor of Engineering

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Assistant Professor Emeritus of English

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Professor of Animal Pathology

Maeser, Sherwin, A.B., Ph.D.,
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Associate Professor of Botany

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Professor of Education

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Professor of Animal Husbandry

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*On leave.

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Nutter, Pauline, B.S., M.S., Ph.D.,
Associate Professor of Foods and Dietetics

Pedersen, N. Alvin, A.B., M.A., Ph.D.,
Professor of English

Peterson, Parley E., A.B., C.P.A.,
Professor of Accounting

Peterson, Henry, A.B., A.M.,
Professor Emeritus of Psychology

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Professor of Soils

Pollard, Leonard H., B.S., M.S., Ph.D.,
Associate Professor of Vegetable Crops

Porter, Wilford D., B.S., M.S.,
Associate Professor of Journalism, College Editor

Preator, Frederick, B.S.,
Assistant Professor of Metals

Preston, William Bowker, M.D.,
Health Supervisor of Students, Professor of Physiology

Rasmussen, D. I., B.S., M.S., Ph.D.,
Associate Professor of Wildlife Management

Rasmussen, Russel A., B.S., M.S., Ph.D.,
Associate Professor of Animal Husbandry

Reynolds, H. Reuben, Graduate of Chicago Art Institute,
Associate Professor of Art

Richards, Bert Lorin, B.S., M.S., Ph.D.,
Professor of Botany and Plant Pathology

Rice, Moyle Q., B.S., M.A.,
Assistant Professor of English

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Professor of History

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Director of Athletics

Ross, Edwin A., A.B.,
Professor in Aeronautics

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Assistant Professor of English

Smith, Arthur D., B.S., M.S.,
Assistant Professor of Range Management

Smith, Harry H., B.S., M.S.,
Professor of Animal Husbandry

***Snell, Robert S.,** B.S., M.S., Ph.D.,
Assistant Professor of Botany

Sorensen, Alma Nicholas, A.B., A.M.,
Associate Professor of English

---

*On leave.

(2)

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

Stark, Arvil L., B.S., M.S., Ph.D.,
Associate Professor of Horticulture

Stevens, Kenneth R., B.S., M.S., Ph.D.,
Associate Professor of Bacteriology

Stewart, George, Ph.D.,
Senior Ecologist (Intermountain Forest and Range Experiment Station), Non-Resident Professor of Range Management and Agronomy

***Stock, Eldon M., B.S., M.S.,**
Assistant Professor of Engineering

***Stock, S. R., B.S.,**
Associate Professor of Radio and Aviation

Stoddart, Laurence A., B.S., M.S., Ph.D.,
Professor of Range Management

Swenson, D. A., B.S.,
Assistant Professor of Woodwork

Symons, Joseph N., B.S., M.S.,
Assistant Professor of Sociology

Thompson, Florence B., B.S., M.A.,
Assistant Professor of Home Economics Education

Thomas, W. Preston, B.S., M.S., Ph.D.,
Professor of Agricultural Economics and Marketing

Thorne, D. Wynne, B.S., M.S., Ph.D.,
Associate Professor of Soils

Tingey, D. C., B.S., M.A.,
Associate Professor of Agronomy

Tingey, V. H., B.S., M.S.,
Associate Professor of Mathematics

Vermillion, Una, A.B., M.A.,
Associate Professor of Institutional Management

Vickers, Wallace J., B.S., M.A., Ph.D.,
Professor of English

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Assistant Professor of Engineering

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Professor of Economics

Wann, F. B., A.B., Ph.D.,
Associate Professor of Plant Physiology

Watson, W. N., B.S., B.A., M.A.,
Assistant Professor of Economics

Welti, Walter, B.A., M.A.,
Associate Professor of Vocal Music

William, J. Stewart, B.S., M.A., Ph.D.,
Professor of Geology

Wright, Stillman, B.S., Ph.D.,
Associate Aquatic Biologist, U. S. Fish and Wildlife Service, Associate in Wildlife Management

---

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INSTRUCTORS

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Freshman Coach, Instructor in Physical Education

Bell, Ruth Moench, B.S.,
Instructor in Speech

***Bergeson, E. C.,** B.S., M.S.,
Instructor in Social Work

Brunk, Leah, B.S., M.A.,
Instructor in Social Work

Burnett, Robert, B.S.,
Basketball Coach

Calvert, Ralph L., B.A., M.A.,
Instructor in Mathematics

Church, Harry Victor, B.A., M.S., Ph.D.,
Instructor in Geology

***Clark, Clayton,** B.S.,
Instructor in Radio

Doty, Ina, B.S.,
Instructor in Secretarial Science

France, LeRoy, B.S.,
Instructor in Auto Mechanics

Fuhriman, Dean K., B.S.,
Instructor in Engineering

Hunsaker, Neville C.,
Instructor in Mathematics

Jensen, Jay, B.S.,
Instructor in Physics

Larsen, Jessie,
Instructor in Art

Madsen, Milton A., B.S., M.S.,
Instructor in Sheep Husbandry

Miner, Glen B., A.B., M.A.,
Instructor in Spanish

Nelson, George,
Trainer and Wrestling Coach

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Assistant in Public Relations Department

Olsen, Margaret, B.S., M.A.,
Instructor in Textiles and Clothing

Page, Edna, B.S., M.A.,
Instructor in Foods

Payne, Edward W.,
Instructor in Radio and Aviation

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Peterson, Howard B., B.A., M.A., Ph.D.,
Instructor in Soils

Rogers, LuDean, B.S., B.M.,
Instructor in Music

Scholes, William, B.S., M.S.,
Instructor in Physiology

Skidmore, Rex A., A.B., M.A., Ph.D.,
Instructor in Sociology

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Instructor in Music

Swenson, Edna, A.B., M.A.,
Instructor in Physical Education

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Instructor in Business Administration

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Assistant Coach and Instructor in Physical Education

West, Clara Pearson, A.B., M.S.,
Instructor in Secretarial Science

***Whitesides, Joe E.**, B.S.,
Freshman Coach and Instructor in Physical Education

Young, Delbert, B.S.,
Assistant Director of Athletics

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Assistant

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Assistant

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Dairy Husbandry

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Co-operator, Forestry

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Animal Husbandry

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Rural Sociology

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Chemistry and Bacteriology

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Entomology

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Chemistry

On leave.

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Irrigation and Drainage

Madsen, David E., D.V.M., M.S.,
Animal Pathology

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Animal Husbandry

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Botany and Plant Pathology

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Range Management

Thomas, W. Preston, B.S., M.S., Ph.D.,
Agricultural Economics

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Agronomy

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Home Economics

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Agricultural Economics

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Horticulture

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Agronomy

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Co-operator, Dairy Manufacturing

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Entomology

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Horticulture

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Thorne, D. Wynne, B.S., M.S., Ph.D.,
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*On leave.

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Botany and Plant Pathology

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Dairy Husbandry

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Animal Pathology

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Agricultural Economics

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Agronomy

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Rural Sociology

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Christiansen, Roy M., B.S.,
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Poultry Husbandry

Jones, Lewis W., B.S., M.S.,
Bacteriology

Peterson, Howard B., B.A., M.A., Ph.D.,
Agronomy

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Intermountain Forest and Range Experiment Station, U. S. Forest Service, Ogden, Utah

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Bureau of Plant Industry

Bateman, George Q., B.S.,
Bureau of Dairy Industry

Blood, H. Loran, B.S., Ph.D.,
Bureau of Plant Industry

Carlson, John W., B.S., M.S., Ph.D.,
Bureau of Plant Industry

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Bureau of Plant Industry

Keller, Wesley, B.S., M.S., Ph.D.,
Bureau of Plant Industry

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Bureau of Animal Industry

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Soil Conservation Service

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Bureau of Plant Industry

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Bureau of Animal Industry

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Bureau of Entomology and Plant Quarantine

Shapovalov, Michael, A.B., M.S.,
Bureau of Plant Industry

Stewart, George, B.S., M.S., Ph.D.,
Intermountain Forest and Range Experiment Station, U. S. Forest Service, Ogden, Utah

Woodward, Rollo W., B.S., M.S.,
Bureau of Plant Industry

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Boswell, S. R., B.S.,
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Assistant Professor, County Extension Agent, Cache County

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*On leave.

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Instructor in Dairy Manufacturing

Whetton, Lois LaVeve, B.S.,
Instructor in Physical Education

Wigg, Virginia,
Instructor in Secretarial Science

On leave.

INTRODUCTION

General Information 34

Divisions of the College 44

Agricultural Experiment Station 44

Engineering Experiment Station 45

Extension Service 46

Summer Session 47

Correspondence Study 48

Branch Agricultural College 49

The College Proper 49

Admission 49

Junior College 53

Senior College 55

Graduation 56

Graduate Study 59

Student Expenses 65

Scholarships and Awards 68

Student Organizations 72

General Information

LOCATION

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 thrifty and progressive population of about 12,000; it is quiet, orderly, clean and generally attractive. Logan is on the Yellowstone Highway, the Utah-Idaho Central Electric line, and the Oregon Short Line Railroad.

Situated on a broad hill overlooking the city, one mile east of the business district, the College 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 and delightful canyon. In other directions are towns 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 in its fundamental policy has always considered the main function of education to be the preservation and improvement of the democratic way of life. The war emergency has brought this policy even more clearly into focus. Even before the war itself actually engulfed the United States, the Board of Trustees of the College took official action to place all the physical facilities of the Institution at the disposal of the Federal Government if their use should become imperative to the national effort. Subsequent to this action, an extended program of defense industry training has been set up under the direct supervision of federal agencies. More recently there have been assigned to the College several hundred Navy and Marine Corps personnel for intensive technical training in mathematics, physics and radio work. Moreover, the regular offering of the College itself has undergone critical re-evaluation in light of the many problems of the emergency.

To promote continuous cooperation with the government in these and other activities growing out of the war, a special Defense Council has been set up including committees on Personnel and Selective Service, Civilian Morale, Fire Protection and Safety, Plant Facilities, Health and Sanitation, and Curriculum.

Although the College has made available its every resource for the successful prosecution of the war, it will, nevertheless, continue a full educational offering in the seven schools of instruction. To do less than this would be to weaken the very foundations upon which democrary rests, for now more than ever before the country needs men and women trained for efficient leadership in every branch of human endeavor. Accordingly, the traditional policy of the College will be maintained, which, in accordance with the spirit of the law under which it was organized, is to provide 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 excellent training in the sciences, mathematics, history, English, art, music, speech, modern languages, and other related subjects. The object is to foster all that makes for right living, good citizenship, high efficiency, and general culture.

Under this general policy, the special purpose of the Utah State Agricultural College is to be of service in the building 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 livestock which in Utah and the West may be most profitable. Instruction in mechanic arts points out the most promising trades and teaches them in such a way as to meet the needs of the area. 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. The School of Home Economics teaches the women right living and economic independence. In the School of Education students are given the professional training which qualifies them for teaching and school administrative positions. Forestry is an accredited professional division which covers the fields of general forestry, range management and wild-life management.

The Constitution of Utah establishes the Utah State Agricultural College and the University of Utah as the two State 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 ruling of its governing board, 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 the fifty-two land-grant institutions in the United States designated by the Federal Government as the institutions 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, the Experiment Station and the Extension Service exist today because of far-sighted legislation which created, stated the purposes, and set forth the fields of activity of these divisions. The Morrill Act of 1862 provided for the establishment of Land-Grant Colleges by the donation of Federal lands thus providing a material basis for these institutions. Utah received 200,000 acres. The second Morrill Act of 1890 carried an annual appropriation to each college; the sum to be spent for instruction in designated fields. Additional Federal legislation increased the financial aid to the institution, including the Hatch Act of 1887 for experimental purposes, the Smith-Lever Act of 1914 to aid in beginning and developing extension work, and more recently, the Bankhead-Jones Act which supports all three divisions in some degree. All these acts constituted the basis of Federal participation in the extension of college education and rural agricultural development to the masses of American people. It was a democratic movement in education. Participation by the Territory of Utah in the Federal program of education came through the passage of an act "to establish an Agricultural College and an Agricultural Experiment Station." This bill, introduced into the legislature by Representative Anthon H. Lund on February 27, 1888, unanimously passed both houses and was signed by Governor Caleb West March 8, 1888.

The purposes of the college were stated in Federal and Territorial acts and in the writings and speeches of the six presidents of the institution. The Federal Land Grant Act of 1862 explained that the colleges were, "without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The Territorial Act of 1888 confirmed these purposes and defined the fields of instruction offered by the college to include "the English language and literature, mathematics, civil engineering, agricultural chemistry, animal and vegetable anatomy, physiology, the veterinary art, entomology, geology, and such other natural

sciences as may be prescribed, technology, political, rural and household economy, horticulture, moral philosophy, history, bookkeeping, and especially the application of science and mechanical arts to the practical agriculture in the field." Though the fields of education increased in number and scope and additional subjects were added to the curriculum in harmony with subsequent legislative acts, each president of the college reaffirmed the purposes as set forth by the Federal and Territorial founders of the school.

In 1913, the Branch Agricultural College at Cedar City, Utah, was established as a branch of the Utah State Agricultural College. It had been, since 1897, a normal school and a branch of the University of Utah. The change was made to meet the growing need of Southern Utah in its agricultural development and since the primary object of the school is to serve the people and to train the youth of Southern Utah to become home and community builders.

The necessary legislation having been enacted to set up the machinery, the next important task was to establish the college concretely. The Lund Act declared the school should be erected "at any place in Cache county that may be designated by the trustees." Logan and Cache county gave the present site of one hundred acres and in 1889, the contract for the south wing of the main building was let to the contractors. Professor J. W. Sanborn of New Hampshire was chosen as director of the experiment station, and in 1890, he came to Utah, arriving in Logan in January. The wing of the building was completed, members were chosen for the experiment station and the college staff, and in September 1890, the college opened its doors to prospective students. President Sanborn, Professors W. P. Cutter, E. S. Richman, John T. Caine, Jr., Abby Marlatt, A. A. Mills, Jacob Sholl, H. C. Everett, and Sarah Goodwin formed the first faculty. The student body of 1890-1891 totaled 139, many of them being below the college rank of those days.

Since its beginning in 1890, six presidents have guided the destinies of the college. Following President Sanborn came President J. H. Paul in 1894, President J. M. Tanner in 1896, President W. J. Kerr in 1900, President John A. Widtsoe in 1907, and the present president, Dr. E. G. Peterson, in 1916. From one building in 1890, the number of buildings has reached thirty-seven, the college faculty has grown from 9 in 1890 to 283 in 1941 and the student body has expanded from 139 in the beginning to a cumulative total for the regular school year, of 3,126. Seven schools: Agriculture, Forestry, Home Economics, Arts and Sciences, Commerce, Engineering and Mechanic Arts, and Education, provide professional and cultural training for the students of the college. The institution is on the accepted list of the Association of American Universities and the American Association of University Women. In 1929 the name of the college was changed from Utah Agricultural College to Utah State Agricultural College.

As is doubtless the case in other state institutions of learning throughout the United States, the facilities of the College, by official action of the Board of Trustees, have been made available to the Federal Government for such use as may seem imperative to the national defense in the present emergency. To this end, particular emphasis has been placed upon industrial training for the national defense, especially in several departments of the School of Engineering. Moreover, recognition of the critical importance of education to the preservation of democracy in all its aspects, has prompted a careful re-evaluation of courses and educational offerings in other divisions of the College as well. Special committees of the faculty have been set up to assist in the guidance of those students who are seeking to find the most significant place in which they can be of service to the nation at the present time.

GOVERNMENT

The government of the College is vested in the Board of Trustees and under its control, through the President of the College, in five other bodies—the deans' and the directors' council, the college faculty, the staff of the experiment station, the staff of the extension service, and the faculty advisory council.

The President as chief executive officer of the College is chairman of the college faculty, and of all college councils, and is ex-officio member of the several school faculties and college committees.

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, an ex-officio 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 board committees that deal with the various interests of the college.

The Deans' and Directors' Council consists of the President, the Deans of the various schools—Agriculture, Forestry, Home Economics, Arts and Sciences, Education, Engineering, Commerce—the Director of the Summer Session, the Executive Secretary, and the Directors of the Experiment Station and 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 College Faculty includes the President, Professors, Associate Professors, Assistant Professors, and Instructors. It is concerned with general questions of methods and discipline, and with other matters pertaining to the general scholastic welfare of the College.

The Faculty Advisory Council consists of fifteen faculty members, five elected each year by secret ballot of the faculty to serve a term of three years, and an additional ten faculty members selected by the President. This body serves in an advisory capacity to the President on all matters pertaining to professional activities and general welfare of the faculty.

THE U. S. A. C. ALUMNI ASSOCIATION

The Utah State Agricultural College Alumni Association was organized on June 13 and 14, 1899, when a group of Alumni met on the campus and formed the Association. At that time there were 44 members. Since then, the Association has shown consistent and rapid growth until it now numbers over 6,000 members, many of whom may be found in the far corners of the world.

Purpose. It is the purpose of the Association, (1) to form and strengthen friendships among the Alumni; (2) to foster feelings of gratitude and love for the College; (3) to establish beneficial relationships between the Alumni and the College; and (4) to promote the interests and welfare of the College and its Alumni.

Membership. Regular membership in the Alumni Association is open to all persons receiving degrees, diplomas or terminal vocational certificates from the Utah State Agricultural College. Regular members may become life members upon payment of twenty-five dollars as life dues. Persons not eligible for regular membership in the Association, but who have done some outstanding service to the Institution are eligible for honorary membership, and may become honorary members upon recommendation of the Executive Committee, and upon being received by the Association.

Government. The governing power of the Association is vested in the Alumni Council composed of fifteen elected members, and ex-officio members. From this group, a president and four Executive members are chosen. The president and the Executive Committee select the Executive Secretary of the Association.

Functions. Besides maintaining as complete and accurate a record as possible of each and every graduate after they leave the College, two special projects have been originated and sponsored by the Alumni Association—the Library Endowment Trust Fund and the Life Membership Fund. Earnings from the former fund, accumulated from popular subscriptions, are given to the College Library to aid it in the purchase of books which ordinarily could not be bought out of the regular Library budget.

The principal from the Life Membership fund is loaned to worthy students to aid them in finishing their college work. Interest from the loans is used to support the Alumni Association.

Since September 1925, the Alumni Association has published the Utah State Alumni Quarterly, a magazine appearing four times each year and devoted to keeping Alumni members informed of each other's doings, and to maintaining a strong relationship between the Alumni and the College.

U. S. A. C. ALUMNI OFFICERS—1942-43

D. A. Skeen, '09, President.

Leonard W. McDonald, '39, Executive Secretary.

Executive Committee, 1942-43—President, D. A. Skeen, '09, Salt Lake City; Thelma Fogelberg, '29, Logan; Evan B. Murray, '27, Logan; Sherman P. Lloyd, '35, Salt Lake City; W. W. Christensen, '23, Idaho Falls, Idaho; Ex-Officio, L. R. Humpherys, '12, Logan.

Alumni Council Members—D. A. Skeen, '09; Ernest R. Lee, '27; George R. Hill, '08; Lucille Owens Petty, '26; Charles D. Kapple, '17; Roy Halverson, '25; Hugh R. Adams, '09; Thelma Fogelberg, '29; L. Burton Redd, '36; Glen Worthington, '29; W. W. Christensen, '23; John H. Bankhead, '97; Sherman P. Lloyd, '35; Johanna Moen, '20; Evan B. Murray, '27; Mary Bennett Smith, '28; L. R. Humpherys, '12, Ex-Officio.

PHYSICAL PLANT

The Physical Plant of the college, consisting of thirty-seven substantial buildings, erected over a period of half a century, comprises one of the most beautiful college campuses in the whole country. It occupies more than ninety acres of the large delta built up of gravels and sediments brought down from the Wasatch Mountains to the east by Logan River into ancient Lake Bonneville over thousands of years. Many of the structures and landscape features of the campus still suggest something of the doings of nature in that remote past. Alterations and carvings of the old lake delta into beautiful terraces, curves and elevations, during the times of its ups and downs and since the last receding of the ancient lake to its present Salt Lake remnant, are still outstanding features. Viewed from the College Hill in any direction, north, south, east, or west, the mountains, the valley, the green fields, meandering streams, and the distant horizons with their angular profiles against clear blue skies, all furnish real sources of inspiration and admiration.

Buildings and Facilities

To house its many varied and rapidly growing educational and research activities, the College now has thirty-seven carefully planned, mostly modern, steam heated and well lighted buildings on the campus. Identified with each building or group of buildings are to be found centers of student activities and interests which largely go to make up the undergraduate life at the college.

The Main Building, so called, a three-story brick structure more than three hundred and fifty feet long, is the landmark in the history of the institution. This building, whose halls and classrooms have resounded to the voices of the classes coming and going since the college was founded more than fifty years

ago, is the hub about which most of the college activities revolve. In it are located the administrative and the business offices of the College and Experiment Station, the departments of Agricultural Economics, Art Education, Geology, Mathematics, Modern Languages, Music, Psychology, Sociology, Speech, Zoology, and the School of Commerce. The College bookstore is in the north wing of the basement. The main auditorium of the College, meeting place for most student gatherings, is also located in the east wing of the building. A Little Theatre, used by the Speech department, is on the second floor, west wing.

A new combination Home Economics and Commons Building, perhaps the most imposing and carefully planned building on the campus for its multiple purposes, is now the social and cultural center of the college. Architecturally, the building is beautiful and modern in every respect. It is used extensively for college functions, the students and faculty alike taking advantage of the facilities offered in the way of longes, reception and ball rooms. The building also houses a beautiful cafeteria with well equipped kitchens and dining rooms which add greatly to the comfort and convenience of the student and faculty patrons. Educationally, this new structure functions on the campus as the housing quarters of the School of Home Economics and the departments of Physiology and Public Health. These several departments are provided with ample space in modern, well lighted classrooms and laboratories. All research and practice laboratories are provided with standard, scientific equipment. Offices of the Deans of Men and Women, and the Student Body, are also located in this building.

The Thomas Smart Gymnasium, a brick structure erected in 1912, has long been a landmark and is still the center of a large part of the athletic activity on the campus. Since its erection, this building up to last year, housed the departments of Physical Education for men and women, Competitive Athletics, indoor and intramural sports, and the offices of the college physician and school nurse, and the whole of the physical education staff. With the completion of the new stadium and athletic field houses two years ago, the crowded condition in the Smart Gymnasium has been greatly relieved. The whole of the Department of Competitive Athletics has been relocated with adequate quarters in the new buildings. These changes have brought about a much more satisfactory housing arrangement together with an adequate and efficient physical training plant.

The new Field House, an immense steel and brick structure, three hundred and fifty-six feet long, by one hundred and thirty-seven feet wide, completed in 1939, has already become a much used building for functional activities of the College. Besides being the new center of college competitive athletics, the building is coming more and more to be used for other larger college and public gatherings. Especially, since the size of the student body became a problem, has the new Field House demonstrated its multiple purpose usefulness by providing adequate space for the annual commencement exercises. Equipped with an excellent basketball playing floor and a seating capacity of more than three thousand, the building now provides ample space to accommodate both students and the public at basketball games or other athletic contests. For indoor tennis, track, softball, and football practice, the building is ideal.

A companion building to the Field House, completed in 1940, is the new Military Science Building, located just a few feet to the east with a corridor connection between the two. This building, a brick-concrete structure, fifty-nine feet wide by one hundred and eighty feet long, now, for the first time in college history, adequately houses the Military Science and Tactics department of the College. It was designed for the special needs of the Military department and is provided with fine offices, classrooms, rifle ranges, gun and equipment supply rooms. A large machine gun shed is made a part of the building. In addition to furnishing excellent housing quarters for the military, this new building addition to the campus has released much needed space in the Main and Engineering buildings for other purposes. Because of its location with relation to the Field House, military training the year 'round has been greatly facilitated.

The Extension Service Building, one of the old buildings on the campus, is a two-story brick structure. It was originally occupied by the Experiment Station Staff. Since the College Extension Service became an important function of the institution, this building has been occupied by the Extension Service Staff, and is now the headquarters of a state-wide educational service organization, maintained by the College and Federal Government jointly.

Widtsoe Hall, a three-story, brick-concrete, fireproof building, was constructed in 1915. It is wholly occupied by the departments of Chemistry, Physics, and the College Experiment Station Laboratories. All classrooms in the building are well lighted and heated, and provided with desks and equipment for teaching demonstrations and experiments. Chemical and Physical laboratories are furnished with ample facilities and scientific equipment for student training and research in these fields.

The Animal Industry Building, a three-story, brick-concrete structure erected in 1917, is occupied by the departments of Dairy Manufacturing, Animal Husbandry, Poultry, Vegetable Crops, Landscape Architecture, and Horticulture. In its large and well lighted rooms, the building is exceptionally well equipped with laboratory and classroom facilities for the study and teaching of dairy manufacturing and animal husbandry, including dairy and beef cattle, horses, hogs, sheep and poultry. A modern and fully equipped cheese and butter manufacturing plant occupies part of the building, which is used for practical training in dairy products manufacturing. Complete laboratories for research and studies in animal nutrition and wool grading are new additions in this building. Classrooms and office space for the departments of Vegetable Crops and Landscape Architecture and Horticulture are provided in this building until such time as other and more suitable quarters can be provided for the work in these fields.

The Plant Industry Building is also a brick-concrete structure of four stories, erected in 1917. It is modern in design and arrangement, and houses the departments of Agronomy, Bacteriology and Biochemistry, Botany, Plant Pathology and Soils. Housed in this building, also, is an excellent Herbarium, located in new quarters on the fourth floor. All the departments housed in this building are provided with well lighted classrooms and laboratories. Laboratory equipment and facilities for teaching and research work are adequate for thorough training in all departments located in the building.

The Engineering Building, a modern, four-story, brick-concrete, fireproof structure, also erected in 1917, was well planned for its special purpose—training in engineering work. The School of Engineering, Trades and Industries has its headquarters here. In this building, all the college work in Civil Engineering, including Surveying, Mechanical Drawing, Hydraulics, Irrigation and Drainage, Municipal and Agricultural Engineering, is taught. With complete equipment and facilities for training in these practical fields of endeavor, the building is taxed to its capacity to accommodate the annually increasing number of students coming to the school for technical engineering and industrial training. Last year a fourth floor was added to the building by redesigning the roof truss and utilizing the attic area in order to provide additional space, much needed to accommodate the larger classes.

The Mechanical Arts Building, housing the manual training shops of the School of Engineering, Trades and Industries, located on the campus to the south of the Main Building, is another of the older buildings of the college. To keep pace with the rapidly expanding demands for training in automotive, radio and aeronautical mechanics, the building has been extensively remodeled and additional floor space provided the last two years. It now houses all shops and laboratories on the campus used for the work in teaching and training in Auto Mechanics, Aeronautics, Woodwork, Forging, Machine Shop practice, Sheet Metal work, Radio and Electricity. Laboratories, classrooms, shops, radio and sound recording rooms used in these several fields, are adequately equipped to give complete training to students wanting to prepare themselves for the skilled technical trades and industries.

The Library Building constructed in 1930, academic and cultural center of the College, is another new building, located on the east side of the campus. Fireproof, beautiful in design and arrangement, it is one of the best of its kind in the intermountain region. With adequately furnished and well lighted reading and stack rooms, the building is the home of a large and rapidly expanding general and technical library for the accommodations of students and public alike. Space is also provided in the building for a Children's Library in connection with a beautifully designed special reading room for under-college-age groups. The departments of English and History use the top floor for their classes because of the convenient access to the library stacks.

The Forestry Building, located on the northwest corner of the campus, is another of the oldest buildings of the College. A four-story, brick structure, in the olden days it was originally a girls' dormitory, and later, the home of the School of Home Economics. Rearranged when the new Commons and Home Economics Building was completed, it now houses the School of Forestry. In this comparatively new educational field, thorough and technical training in the departments of Forestry, Range and Wildlife Management is provided by the College. Its classrooms, laboratories and specimen museums are provided with equipment and all facilities for complete training in these new and important fields of national resources. In connection with the Forestry School, the College conducts a Forestry Summer School for students at its own camp, located in Logan Canyon about twenty miles northeast from the College.

Child Development laboratories and practice houses occupy two campus residences immediately north of Widtsoe Hall. In connection with these, outdoor space, well supplied with playground equipment, is available to the important and rapidly growing Child Development movements.

The new Women's Residence Hall, a beautiful, brick-concrete, fireproof building completed in early 1938, is a real and greatly needed addition to women student housing facilities in Logan. The building, located to the east of the Library Building, is provided with a commodious, beautifully furnished community reception room, a lounge and laundry. The dormitory rooms are well furnished, heated and lighted, providing comfortable, modern accommodations to about one hundred women resident students. The building is air-conditioned throughout.

College greenhouses on the campus are now composed of seven complete units which cover 11,588 square feet of planting space. Head houses, built in connection with the greenhouses, furnish ample room for laboratory, storage, and sorting space needed for student training and research in plant breeding and propagation in horticulture, floriculture, vegetables, grains and grasses. In 1939, two new greenhouses were added to the plant, which have greatly relieved the crowded condition in the old houses. The new houses are used largely for experimental work in plant breeding research, insect and disease control.

The latest addition to the family of campus buildings, and just now nearing completition, is the new community housing plant known as the Rural Arts building. This one-story, brick-concrete and lumber structure is the product of an N.Y.A. project sponsored by the College and Extension Service, construction of which started in early summer, 1940. The building had its initiation by direct contributions from the rural people in the counties of the State, agricultural organization, 4-H clubs, Future Farmers and others, which resulted from a definite effort on the part of the leaders attending the Leadership Training School to have better quarters in which to be housed for such conferences.

The building is of the early Spanish-American style of dwelling, two hundred and thirteen feet long by seventy-three feet wide, with two large patios, forty-seven by thirty-one feet in each wing. Its wings, one for men and one for women, are separated by a large lecture room, the offices and rest rooms, occupying the center section. The building will have a capacity for the accommodation of two hundred and twenty-eight people, and will be ready for occupancy by the beginning of the 1941-42 school year.

As its name implies, the new Rural Arts Building is to be dedicated to the service of the rural people of Utah who come in groups periodically to

the college for short-course educational and inspirational work, under the guidance of the Extension Service staff. It promises to fill a real need at the College by taking care of the housing problem that has long been encountered by the institution whenever transient groups have been brought to the campus.

The College barns include a group of buildings suitable for the care of cattle, horses, sheep, and hogs with ample storage space for supplies of livestock feeds. In the college owned herds on the campus, are to be found individuals and groups representative of various breeds of livestock common to the intermountain section. An experimental demonstration Holstein dairy herd is maintained and operated by the College and Experimental Station on a modern dairy farm located at North Logan, one mile north of the campus. In 1939, more pure bred dairy and beef cattle were added to the herds. Most of these additions are located on farm property recently acquired from Cache County, both of which add greatly to the facilities of the College for training students in livestock feeding and breeding technique.

A Stock Judging Pavilion on the campus, used in common by the several livestock departments, makes it possible to do stock judging under comfortable conditions at all seasons of the year.

The Poultry Plant, built on the colony plan, is adequately equipped for class and experimental research work in poultry husbandry. Among the College flocks are all the important breeds of domestic fowls. The plant is equipped and extensively used for study and research on the best methods of feeding, housing, and disease control in poultry to obtain the most economical production.

The Veterinary Science Building, a one-story brick-concrete structure, and a recent addition to the campus buildings, has office space, a well equipped dispensary, operating rooms, stalls for animals, and modern equipment for training and scientific work in the field of Veterinary Science and Medicine. A veterinary clinic is periodically conducted in connecton wth the work of this department. The building is equipped for research and clinical work in Veterinary Science and animal diseases.

The Heating Plant of the College is located in one central boiler house on the campus. From this central plant, heat is supplied to all the buildings on the campus by means of steam through distribution lines in underground tunnels. To provide adequate heat for the greatly increased campus requirements of the last few years, the plant was much enlarged in 1939 and put on a high pressure steam operating basis. The plant now has a capacity of approximately one thousand horsepower. The latest addition to the plant was a two hundred and ninety horsepower water tube boiler, capable of operating at one hundred per cent overload.

Laboratories

The college laboratories, including Animal Breeding, Animal Nutrition, Bacteriology, Botany, Chemistry, Engineering, Entomology, Farm Crops, Geology, Home Economics, Mineralogy, Physics, Physiology, Plant Pathology, Soil Physics, Wool and Zoology, are adequately equipped and provided with satisfactory working conditions. The equipment of the laboratories is generally complete and extensive experimental research work is carried on by the faculty and advanced students in many different scientific fields.

The College Library

The College Library is designed primarily to provide students with the books, magazines, and documents they need in their resident study programs. Its next purpose is that of providing faculty members with the volumes they need to prepare themselves for their teaching and research functions. However, any citizen of the State may make arrangements to borrow through his home library any book not in actual use or demand. Citizens located near enough to the College to do so, may call and make arrangements to use the library directly.

The collection, which now numbers approximately 80,000 volumes, plus 95,000 government documents, is housed in a new building, erected in 1930. On the first floor are located the Reserved Book Room, cloakrooms, and the Children's Library. On the second floor are the Loan Desk, Information Desk, card catalogues, indexes, and the main reading room. The third floor is used for classes of the departments of English and History.

The collection of government documents is especially strong (now about 95,000 volumes) as it is a depository library. Furthermore, the Experiment Station Library has been recently incorporated in the Main Library, practically doubling the holdings in the United States Department of Agriculture publications and various state agricultural experiment station bulletins.

The sets of periodical and serial publcations, particularly those sponsored by learned societies, are being added to and missing volumes filled in each year. It now subscribes to 439 scholarly journals and receives 174 as gifts. Four major daily papers are subscribed to, and about 40 gift subscriptions of local weeklies are sent it each year.

The scientific and technical fields receive the major emphasis in the book collection. At present, it is strongest in botany, physiology, bacteriology, nutrition, and geology. Zoology and animal husbandry are now close seconds. While the foregoing represent exceptional undergraduate collections, it now has an adequate list of holdings in all the fields of the college to meet ordinary demands. For instance, while it does not have the breadth of material in arts and literature which some liberal arts colleges possess, it has the material needed for classwork. Furthermore, it is building a large collection of twentieth century poetry and fiction to encourage recreational reading. Its collection in the social sciences is not very inclusive, as the volume of literature now produced in that field is tremendous. However, by means of careful selection, it is beginning to build strong collections in those fields in which majors and minors are offered.

A fairly complete list of the library holdings in periodicals, indexes, and reference tools may be found in the U. S. A. C. Manual for Research Writing. Some directions for use of the library are to be found in the freshman Bluebook. Regulations are also printed on the book cards used at the Loan Desk and on the cards used in the Reserved Book Room. However, for help in using the library, users should call at the information Desk, or ask one of the full-time staff members in any division for assistance.

Several departments have small working collections of books purchased by these departments and designed primarily for use of departmental majors. These books are not all listed in the main library catalogues. Students should check to see whether or not such a collection is in existence within their department.

Students seeking employment in the library should note that all positions are filled either by N. Y. A. workers or by those who have passed a special library examination given the last Saturday in April each year. Students wishing to prepare for positions as teacher-librarians are urged to note the courses listed under the Education Department in this catalogue.

Library Hours

Loan Desk (or Circulation Desk) and Reserved Book Room: 8 a.m. to 10 p.m. Monday to Thursday; 8 a.m. to 6 p.m. Friday; 9 a.m. to 4 p.m. Saturday; 1 p.m. to 5 p.m. Sunday. Children's Library, 1 to 5 p.m. Monday, Wednesday, Thursday, Friday. Music Programs (in Children's Library), 7:30 to 9:30 Monday, Wednesday evenings. Forestry Library 8 a.m. to 5 p.m. Monday to Friday.

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 cannot come to the College Campus.

To accomplish this work, the following administrative divisions exist:

I. Research.

The Agricultural Experiment Station.

The Engineering Experiment Station.

II. Extension.

The Extension Service.

III. The Summer Session.

IV. The Correspondence School.

V. The Branch Agricultural College.

VI. The College Proper.

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.

AGRICULTURAL EXPERIMENT STATION

R. H. WALKER, *Director*

THE Agricultural Experiment Station, established in 1889, is a major division of the College. It is charged with the responsibility of conducting research in Utah under provisions of the Hatch, Adams, Purnell, and Bankhead-Jones Acts of Congress, and of various acts of the Utah State Legislature. Its primary objective is to conduct experiments and scientific researches that have for their purpose the establishment and maintenance of a permanent and efficient agricultural industry and the development and improvement of the rural home and rural life. The research results are prepared for dissemination in the form of bulletins and scientific articles. They form the basis for much of the work of the Agricultural Extension Service.

The staff of the Agricultural Experiment Station numbers approximately 60, many of whom are also members of the teaching faculty of the College; some of them also divide their time with the Agricultural Extension Service of the College. In addition, several employees of various bureaus of the U. S. Department of Agriculture are assigned to work on the campus and collaborate in the agricultural research program of the Station.

The main offices of the Agricultural Experiment Station, including the office of the Director, the Executive Secretary, and the Division of Publications, are on the College campus, on the first floor, south wing of the Main Building. Most of the research laboratories used by the Experiment Station

are also on the campus, distributed as necessary among the various College buildings.

Greenhouses are maintained for investigations in horticulture, vegetable crops, agronomy, botany, plant pathology, entomology, bacteriology and biochemistry, and range management. These facilities have been considerably augmented in the past two years.

Livestock husbandry investigations are conducted at the barns on the college campus, at the Branch Agricultural College, at the U. S. Forest Service Desert Range Station, and on the ranges in different parts of the state.

The Station also maintains a number of experimental farms:

At the **Dairy Experimental Farm,** composed of 86 acres of land, barns and a house, the Station, in cooperation with the United States Bureau of Dairy Industry, maintains and experimental Holstein dairy herd of about sixty purebred animals. Pasture investigations are also conducted here.

The Greenville Farm, a 45-acre tract, is used for experimental work in plant breeding and other phases of crop production.

The Davis County Farm at North Farmington is a 23-acre tract used for experimental work in horticulture and vegetable crops.

At the **Nephi Dry-Land Substation,** experimental work in dry farming methods and crops is conducted. This farm is composed of 103 acres.

Besides these farms, the Station rents land for experimental purposes in various parts of the state.

Other investigations not involving the use of land are also conducted throughout the state. Among these investigations may be mentioned the soil survey work; plant disease surveys; problems of injurious insect control; problems connected with land use, agricultural marketing and farm management; studies of the social problems connected with rural living; the gathering of snow survey data, problems connected with irrigation and the surveying of range resources.

These research facilities have a three-fold importance in the institution: First, they make it possible for the teaching faculty to fortify instruction with the results of original research; second, they afford advanced students an opportunity to keep in touch with research methods and facilities; and third, they offer employment to students qualified to act as research assistants or laboratory aids. Between fifty and one hundred students thus employed are on Station payrolls each month of the school year. Several find employment in laboratories and on the experimental farms during the summer months.

Major lines of research now in progress include projects in the departments of Agricultural Economics, Agronomy and Soils, Animal Husbandry (including Dairy and Poultry Husbandry and Animal Diseases), Botany and Plant Pathology, Chemistry and Bacteriology, Entomology, Home Economics, Horticulture, Human Nutrition, Irrigation and Drainage, Physics, Range Management, Rural Sociology and Vegetable Crops.

ENGINEERING EXPERIMENT STATION

GEORGE D. CLYDE, *Director*

BY act of the Board of Trustees of the Utah State Agricultural College, December 2, 1918, the Utah State Engineering Experiment Station was established to serve the State in a manner broadly outlined as follows:

(1) To serve those industries and utilities affecting the agricultural and rural populations of the State and to aid public officials and teachers by making engineering investigations of significance and interest to them.

(2) To further the development of methods of processing and use of waste products from agriculture.

(3) To develop methods of processing and making available for use the undeveloped agricultural and industrial raw materials of the State.

(4) To further develop the science of Irrigation and Drainage to the end that the land and water resources of the State may be most fully utilized.

(5) To stimulate a greater use of native materials in rural housing and farm structures.

(6) To develop applications and uses of power equipment and to help solve problems relating to the water supply and sanitation of the farm home.

(7) To develop new tillage, harvesting, and weed control equipment.

(8) To develop new methods and uses of native materials in the construction of farm to market roads and highways.

(9) To cooperate with the Federal government in the conducting of investigations along these and other lines of engineering in harmony with the functioning of the Land-Grant College.

(10) To stimulate and elevate engineering education by developing the research spirit in faculty and students.

(11) To publish and distribute through bulletins, circulars, and technical articles in periodicals the results of such studies, surveys, tests, investigations and researches as will be of greatest benefit and interest to the people of Utah.

The Engineering Experiment Station is an integral part of the School of Engineering, Industries and Trades, and the laboratory facilities and shops of the School of Engineering are available for the investigational work of the Station to extent of sums allocated for their operation and support.

The Dean of Engineering is Director of the Station, and the staff is composed of members of the teaching staff from the School of Engineering, Industries and Trades and from other departments whose work is directly related to the work of the Station and of research fellows who are pursuing graduate study and are assigned part time to work in the Station.

Station bulletins and circulars are published from time to time representing the results of research projects.

THE EXTENSION SERVICE

WILLIAM PETERSON, *Director*

THE Extension Service stands for the maintenance of the family sized farm and the home and family that go with it. The income from such a farm cannot all be measured in terms of cash; part of it consists of fresh food, comfortable home and pleasant surroundings. The stability of ownership and the close contact with nature develop virtues in that family which make it the highest type of American citizens.

To accomplish the above objective, work is planned along the following lines:

1. To increase the net income of the farmer through more efficient production and marketing and the better use of capital and credit.

2. To promote better homes and a more satisfactory standard of living on the farm.

3. To develop rural leaders, through short courses and individual direction.

4. To promote the mental, social, recreational and community life of rural people.

5. To implant a love of rural life in farm boys and girls. This is accomplished largely through the program of the 4-H clubs.

6. To acquaint the public with the importance of agriculture in the national life.

7. To enlarge the vision of rural people and the nation on rural matters.

8. To improve the educational and social life of rural people.

9. To help in a program that will add beauty and other living satisfactions to the rural homes.

10. To give assistance in the marketing problems affecting farm production.

The Extension Service works through the county planning committees, using their studies and recommendations as a basis for the Extension program within the county. It also works with all other 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 of the farm and home. Information on problems that are of common interest to groups is given in project form, and followed up progressively until satisfactory solutions are found and approved practices established. Information is also disseminated by demonstrations, lectures, film strips, motion pictures, news articles, radio, and illustrations. Materials for much of the scientific data imparted by the Extension workers are supplied by the Experiment Stations. The State specialists work with the County Agricultural and Home Demonstration agents in assembling information and determining methods of solution. Voluntary project leaders chosen from local communities are trained by specialists and county agents to assist in organizing and leading project groups.

The Extension Service cooperates with the Farm Bureau, the State Department of Agriculture and other state departments dealing with agriculture, Church Welfare Committee, all agricultural commodity organizations and other federal agencies.

The list of projects carried by the Utah Extension Service Staff throughout the state, follows:

Irrigation, Civic Improvements, Flood Control, 4-H Clubs, Fertilizers, Foods and Nutrition, Farm Management, Clothing, Landscaping, Forestry, Home Management, Horticulture, Weed Control, Home Furnishings, Rodent Control, Livestock Management, Breeding, Feeding, Disease Control, Production Records, Wool Production, Dairy Manufacturing, Poultry Raising, Vegettable Gardens, Crop Improvement, Meat Cutting and Preservation, Erosion Control, Land Use, House Plans, Building and Remodeling, Farm and Home Accounting, Health, Cooperative Marketing, Organization and Leadership training in Agriculture, Home Economics and 4-H Club Work, Live-At-Home Methods, Family Savings and Investments.

The Extension Service gives considerable time assisting in putting the Agricultural Adjustment Administration program into effect. It also cooperates closely with other federal agricultural agencies operating within the State.

THE SUMMER SESSION

M. R. MERRILL, *Director*

FOR more than a quarter of a century the College has conducted Summer Sessions as an important part of its curriculum. Since 1924, the program has been materially enlarged and enriched and a very stimulating 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 Sessions, nearly all of the departments of the College are represented, the courses of instruction being arranged to meet the particular needs of summer students.

The courses offered in Education, Psychology, and related departments, make it possible for the students to meet all of the requirements for Utah certification in School Administration and Supervision for High Schools, Junior High Schools, and Elementary Schools. The curriculum will also meet practically all of the requirements for certification in surrounding states.

Many other departments give major attention to the Summer Session offering, notably, art, music, trades and industries, library science, industrial arts, physical education, the various branches of Home Economics, particularly child development, and the natural sciences.

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

Graduate Credit

Summer session students are allowed six years in which to satisfy requirements for the Master of Education and Master of Science degrees, but may fulfill the requirements for this degree by attendance at four Summer Sessions with additional intersession attendance, or non-resident research. 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 chairman of the committee on graduate work 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.

CORRESPONDENCE STUDY

M. R. MERRILL, *Director*

THE Utah State Agricultural College was one of the first educational institutions of the intermountain region to establish a Correspondent study department. Correspondence study furnishes an excellent opportunity for systematic instruction to students of high school or of college grade; the same is true also of the teacher, the professional or business man, the club woman, the project leader in extension work—to all who cannot leave home for residence at college.

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:

1. Collegiate studies. A wide variety of subjects is offered in the following departments: Agricultural Economics and Marketing, Agronomy, Animal Husbandry, including Poultry and Dairying, Art, Bacteriology, Business Administration and Accounting, Economics, Education, English, Entomology, Geology, Home Economics, History, Horticulture, Irrigation and Drainage, Mathematics, Political Science, Psychology, Public Health, and Zoology and Entomology.

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

3. Preparatory, high school studies are offered 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 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.

A special catalogue of Correspondent study courses will be mailed on request.

BRANCH AGRICULTURAL COLLEGE

HENRY OBERHANSLEY, *Director*

THE Branch Agricultural College at Cedar City has been a branch of the Utah State Agricultural College since 1913. This Institution is under the direction of the Board of Trustees. It offers training in the usual branches of college work, covering particularly the first two years. An important responsibility of the Branch College is to function as a distributing center for agricultural and home economics information in southern Utah. The curriculum of the Branch Agricultural College is closely supervised by the Deans of the various divisions at the Utah State Agricultural College, and several of these Deans are on the regular faculty of the Cedar City institution where they give special work during the year. The Extension Service and the Experiment Station are closely connected with the Branch Agricultural College, and certain members of the resident staff at Cedar City are also members of the staffs of these two divisions.

The College Proper

ADMISSION

FRESHMEN: Entrance to the Freshman class is based upon graduation from an accredited high school, or, upon the presentation of 15 approved high school units of work, or by examination of those students who have had special training not obtained in high school. Prospective students are urged to send a record of their credits to the Registrar at least two weeks before the opening of school, and in any case to bring them on the day of registration. Students who expect to become candidates for any degrees or diplomas from any of the Schools of the College must include, among the units presented for entrance, 10 units in the following five groups: English, Mathematics, Social Science, Natural Science, and Modern Languages, to be distributed as follows:

English	Three Units
Algebra	One Unit
*Geometry	One Unit
Social Science	One Unit
Natural Science (requiring laboratory work)	One Unit
Elected (from the above groups and Modern Languages)	Three Units

*The requirement of one unit of plane geometry is a general institutional requirement. However, by special faculty action, certain departmental majors, to which plane geometry is not a prerequisite, are permitted to substitute for the plane geometry one unit of other high school work, within the five groups specified above, which is deemed more closely related to the major. Students without plane geometry at the time of entrance will be considered as deficient in this course until such time as the course in plane geometry is completed or until a student is admitted to candidacy for graduation and the major professor certifies to an acceptable substitute.

Students who have 15 units of high school work and yet are deficient in one or more of the above requirements shall be directly responsible to the Entrance Committee for the removal of these deficiencies. The arrangements for the removal of these deficiencies must be approved by the Committee in advance and must be substantially completed before the end of the first year in college.

Any deficiency in any item of the above specified 7 units must be removed by work in that particular field or subject. A deficiency in the total of 10 units mentioned above may be removed by work in any of the above mentioned fields. If collegiate work is to be used to remove deficiencies, courses so used cannot be used to fill the college group requirements or the minimum requirements in the major or minor, but the hours may be counted in the total of 186 required for graduation. Nine quarter hours of college work must be used to remove each unit of high school deficiency. Any junior college courses in departments offering work in the basic groups may be used to remove high school deficiencies in the corresponding fields.

A student who has less than 15 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 with 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 principal of the high school attended, to the effect that the applicant is a person worthy of admission to the College, and 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:

1. By using the credits obtained while vocational students to satisfy college entrance requirements. In such cases 9 quarter hours will be taken for each deficient high school unit.

2. By passing written entrance examinations. These examinations will be offered the third day of each quarter. This examination will be under the direction of the College Entrance Committee and will consist of mental tests, subject achievement tests and tests in the fundamental tool subjects. These examinations shall be administered in such a fashion as to select only the more promising students.

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

Transfers from Other Colleges. (Advanced Standing): The College does not grant collegiate credit for excess high school work. Advanced standing for work of satisfactory grade 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 In-

stitution, and will not be returned. Advanced standing credits, while they may be acceptable toward a degree, will not be included on a transcript of college credits until after the degree has been conferred. Transcripts should be sent to the Registrar two weeks in advance of registration. It is necessary to have them at the time of registration, in order to arrange the course of study properly.

Registration and Credits

Quarter Credits (Definition): A quarter hour credit is the credit given for one hour of lecture or three hours of laboratory work each week for 12 weeks.

Class Standing: Forty-eight hours of approved college work in addition to the prescribed entrance requirements, are required for Sophomore rank; 96 hours for Junior rank; and 136 hours for Senior rank. The foregoing figures include the required credits in Physical Education or Military Science.

Registration Dates: Registration dates for the Fall Quarter are as follows: Friday, September 25 has been set as the registration day for all new students. This includes students transferring direct from high schools and also all students transferring with advanced standing credit from other institutions of higher learning. All **former** students, that is students who have been registered in residence at the U. S. A. C. in some previous year, will register on Saturday, September 26. This will include students of all class ranks. Classes will begin Monday, September 28.

For the Winter Quarter, all students will register on Monday, January 4. Classes will begin Tuesday, January 5.

Registration for the Spring Quarter will take place on Monday, March 22. Class work will begin Tuesday, March 23.

On each registration day, students will be permitted to register according to an alphabetical schedule to be announced later.

Late Registration: Registrations after the last date given above for each quarter are considered late. A fee of one dollar per day will be charged for those who register late, with a maximum fee of five dollars. In case the registration cannot be completed by the prescribed day, owing to some delay caused by the College or its officers, an exemption may be obtained upon application to the Registrar on the regular day of registration. The amount of work for which any student will be allowed to register will be reduced by one and one-half credit hours for each week or fraction thereof that a student is late in registering.

Normal Registration: Fifteen hours, exclusive of the one hour of required Physical Education or Military Science, is the normal registration for any one quarter. A student not otherwise limited may, however, with the consent of the Dean or Adviser, register for seventeen hours.

Excess Registration: Registration in excess of 17 hours, exclusive of the one hour of required Physical Education or Military Science, and ½ hour of Freshman orientation can be granted only by the Attendance and Scholarship Committee upon petition. The necessary forms may be obtained at the Registrar's Office. Excess credit is added to the student's registration by the Registrar's Office after the petition is granted. Students are not allowed to receive less credit than that listed for a course in order to bring the total registration within the maximum limit. The registration is construed to include any Extension, Correspondence, Institute, or other work carried by the student for credit or for removal of high school deficiencies during the period of the school year in question. This rule does not apply to students taking a prescribed course requiring excess registration as in the Schools of Engineering and Forestry.

If, by oversight, the registration cards are allowed to be filed with excess credit, the registration will be reduced to the allowed limit as soon as the error is detected.

No student will receive credit for residence work which is not included on his registration card, which must be filed in the Registrar's Office before the end of the quarter. Students who wish to attend regularly any class for which they are not registered, must obtain a visitor's permit from the Registrar's Office. No credit will be allowed for such attendance.

Withdrawal From Classes: The program of courses listed on the student's registration card approved by his faculty adviser or major professor and filed in the Registrar's Office is considered as the student's official registration for the quarter. A student is held responsible for the satisfactory completion of the entire program. Unless an official "Change of Registration" form is filed with the Registrar's Office before one week following the mid-day of each quarter, F grades will be recorded in case of failure to obtain passing grades in any of the courses for which the student has registered, regardless of the reason for the failure. Changes are considered official only when signed and approved by the instructors of the classes and the faculty adviser or major professor.

Incomplete Work: Students are required to complete by the end of the quarter, all courses for which they have registered. This includes Correspondence courses for which the student may be registered on the residence registration fees. Incomplete grades can be granted by an instructor only when permission is granted by the Committee on Incomplete Grades before the close of the quarter. The necessary petition forms may be obtained at the Registrar's Office.

Incomplete work must be finished, and a passing grade given in the course, within one year of the close of the quarter, otherwise the credit is forfeited.

Credit by Examination: In special cases, students may be permitted to obtain college credit by passing examinations in subjects not taken in course. This privilege does not contemplate the combination of "visiting" or "auditing" a class with a request for a special examination as a means of acquiring credit. Neither does it contemplate outside assignments or outlines on the part of the instructor being combined with an examination to acquire credit. This privilege is intended to measure informal education experience that is the possible equivalent of an organized course given in the college.

A maximum of eighteen quarter hours can be acquired by special examination. None of the last thirty hours presented as credit for a B.S. degree may be obtained in this manner. Unless the examination is taken prior to the close of the second week of the first quarter for which a student enrolls in any given school year, the hours of credit gained will be included as part of the student's load for the quarter.

Petition should be made to the Committee on Special Examination on special forms to be obtained at the registrar's office.

Low Scholarship and Probation. Students who have not maintained an average grade of C or better and students failing to obtain passing grades in 12 or more hours of work during the preceding quarter are automatically placed in the low scholarship group. No person in the low scholarship group shall be eligible to be elected, appointed, or hold office in the student body organization.

Students in the low scholarship group may be placed on probation for poor scholarship.

Students on probation who violate the terms of their probation are subject to immediate suspension from the college.

When in doubt regarding any of the regulations affecting them, students on probation should consult with the Attendance and Scholarship Committee. This Committee, alone, has the authority to waive or modify the terms of probation.

Students in the low scholarship group should not register for more than 15 hours per quarter, exclusive of Physical Education and Military Science.

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

Junior College students will not be allowed to enter Senior College courses except upon approval of the Dean or Adviser, and the instructor of the course.

THE JUNIOR COLLEGE

THE Junior College comprises the work of the Freshman and Sophomore years. The main purposes of this division are to provide a broad and integrated background in the principal fields of human knowledge, and to fulfill the prerequisites for the major work upon which the student will concentrate in the Upper Division.

Provisions are made in several departments of the College for the issuance of Certificates of Completion for two years of work as prescribed by such departments.

Students who expect to become candidates for the Bachelor's degree should plan their courses with great care through consultation with their faculty advisers and major professors, in order to insure the best choice of courses for filling the groups and to provide the proper foundation for their advanced work. Failure to do this may necessitate an extra year to complete the work for the desired degree.

Various changes have been made in the junior college group requirements since the Fall of 1933. Students entering since 1933 may elect to satisfy the set of requirements published in the catalogue of the year they entered, or any subsequent year. Having chosen the requirements as specified for any one year, a student must satisfy those requirements in total. In other words, a student will not be permitted to select a portion of the requirements for one year and a portion of the requirements for another year and combine them to make up a new set.

Beginning with the Freshman class entering in 1937-38, students should satisfy the following requirements, in order to complete the work of the Junior College Division.

1. Remove any deficiencies that may exist in the entrance requirements.

2. Complete 96 quarter hours of work (including Military Science and Physical Education).

3. Prepare a foundation of at least 15 hours for the field of specialized study in the Senior College.

4. Satisfy the (A) English, (B) Group, (C) Military Science and Physical Education requirements as follows:

A. **English Composition.**

1. A special placement examination in English is required of all freshmen. This examination is a prerequisite for admission to sophomore composition (English 10 or 11).

2. All students except majors in the School of Engineering are required to take sophomore composition (English 10 or 11) in the sophomore year.

3. All students must present at least four hours of advanced English Composition, (English 110) or its equivalent. (To be taken in the Senior College.)

Group Requirements

B. **Groups:** A total of 40 quarter hours must be selected from the following four groups with not less than 8 hours, nor more than 12 hours being counted in any one group.

1. **Biological Science:** At least 8 quarter hours of credit must be selected from the following basic Biological Science courses. Not more than 12 quarter hours of such credits can be counted in the total of 40 hours required in the four groups.

Bacteriology—any course of Lower Division grade.

Physiology 4, 5, 14.

Zoology 1, 3, 4.

Botany 1, 21, 22, 23.

2. **Exact Science:** At least 8 quarter hours of credit must be selected from the following basic Exact Science courses. Not more than 12 quarter hours of such credits can be counted in the total of 40 hours required in the four groups.

Chemistry—any course of lower Division grade.

Geology—any course of Lower Division grade.

Mathematics—any course of Lower Division grade.

Physics—any course of Lower Division grade.

3. **Language and Arts:** At least 8 quarter hours of credit must be selected from the following basic Language and Arts courses. Not more than 12 quarter hours of such credits can be counted in the total of 40 required in the four groups.

English—any literature course of Lower Division grade.

Speech—any course of Lower Division grade.

Modern Language—any course of Lower Division grade in French, German, Spanish, or Latin. (Subject to the condition that one full year must be completed in any beginning Language course before any credit can be counted.)

Art 1, 2, 3, 22, 26, 32, 33, 35.

Music 1, 4, 5, 11, 12, 13, 80, 81, 87.

Landscape Architecture 3.

4. **Social Science:** At least 8 quarter hours of credit must be selected from the following basic Social Science courses. Not more than 12 quarter hours of such credits can be counted in the total of 40 hours required in the four groups.

Agricultural Economics 53a, 53b, 62.

Economics 51, 52.

History—any course of Lower Division grade.

Psychology 3.

Political Science 1, 10, 70, 71.

Sociology 10, 70.

5. **Freshman Orientation:** Lectures on problems of adjustment to college life and on the vocational opportunities for which the college gives training. Required of all freshmen students. Some of the otherwise general assemblies will be divided into groups among the seven schools of the college and a Division of Orientation for students who are undecided upon a major study. These group meetings will be announced in the general meeting.

C. **Physical Education:** Six quarters of work in Physical Education activity classes are required of all women students, and also of all men students who do not take the required courses in Military Science (see Military Science and Tactics).

In departments where there is a prescribed course of study such as in Forestry, and Smith-Hughes Teacher Training courses, and in Engineering, Industries and Trades, the completion of such courses shall substitute for the group requirements provided the student remains in that field.

THE SENIOR COLLEGE

NINETY-SIX quarter hours of credit are required for admission to the Senior College Division. Graduates of standard normal school and junior colleges and students from other colleges who present at least 90 hours of college work, in addition to the courses in Physical Education or Military Science required at the institution from which they are transferring, may be registered in the Senior College.

The completion of the group requirements in any accredited collegiate institution will substitute for the completion of the group requirements at this institution, as prescribed in the section on the junior college. This does not apply to students who have been pursuing prescribed courses which do not include the group requirements. Students who change from a prescribed course to a major under the group elective system will be held for the completion of the basic group requirements as specified in the section on the junior college. Transfer students who continue on in a prescribed course will be held for the completion of the junior college courses as prescribed at this institution, except as equivalent courses may be accepted as substitutes for our own courses.

Major Subject: The student should select a major subject upon entering, or early the first year, but in no case later than entrance in the Senior College. As soon as the major subject has been selected, the student should contact the head of the department in which he has decided to major. The head of the department will thereafter act as the student's adviser. The student's registration in each succeeding quarter should be carefully checked and approved by this adviser (called the major professor) in order to insure proper selection and sequence of courses for satisfying institutional and departmental requirements.

The Major Department has the authority to prescribe not less than 30, and not more than 50 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 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 36 hours.

Minor Subject: The student is permitted to choose his own minor. The minor shall consist of 18 credit hours either in one department or in two departments closely related in nature of subject matter, provided that if the minor is in more than one department it must have the approval of the Dean and the Major Professor.

Courses used to satisfy the English composition, the basic groups, military science or physical education, and freshman orientation requirements as specified under the Junior College cannot be counted in the minimum 30 hours for a major or 18 hours for a minor.

GRADUATION

The College offers Certificates of Completion for two years of applied work in certain departments, Three-year Normal Diplomas in the School of Education; the degrees of Bachelor of Science and Master of Science in all of the Schools of the College; the degree of Master of Education in the fields of Agriculture, Home Economics, Social Sciences, Physical Sciences, Biological Sciences, and Industrial Education; and gives work to fulfill the requirements for all the professional certificates issued by the State Board of Public Instruction.

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

Students are expected to familiarize themselves with institutional rules and regulations. The responsibility for satisfying the requirements for graduation rests upon the students concerned.

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

Requirements for the Two-year Certificate

The Schools of Agriculture, of Home Economics, and of Engineering, Industries and Trades offer two-year courses in practical studies leading to a certificate of completion, for those who wish to fit themselves better for their vocation and for life, and who cannot spare the time for the regular four-year course leading to the B.S. degree.

In the Schools of Agriculture and of Home Economics the courses are arranged so that the student may, at a later date, complete the four-year course with a minimum loss of time. While these short courses are designed to develop a broader understanding of the sciences underlying these fields and to lay the foundations for good citizenship, they offer a considerable range of selection of practical courses of both the Junior and Senior College grade.

The general requirements for this Certificate are:

1. Satisfy the entrance requirements (page 49).

2. Complete 96 quarter hours of work, which includes the required work in Physical Education or Military Science (page 256).

3. Complete a Major of 30 hours in one or more closely related departments of the School in which the Certificate is granted.

4. Complete a Minor of 15 hours closely related or basic to the Major field. This need not be in the same school.

5. Complete 24 hours in the basic groups, as follows: Language, 9, which shall include English 10; Exact Science, 5; Biological Science, 5; and Social Science, 5.

6. Complete 21 hours of elective work.

Only Junior College credit may be obtained for work taken during the short course, even though some Senior College courses be taken.

For additional information, see descriptions of work in the school concerned.

In the School of Engineering, Industries and Trades, definite programs of study are prescribed leading to certificates of completion within definite fields of applied industrial work. These curricula may be found listed on page 207.

Requirements for the Degree of Bachelor of Science

The College confers the degree of Bachelor of Science in Agriculture, Forestry, Arts and Sciences, Agricultural Engineering, Civil Engineering, Commerce and Business Administration, Home Economics, Education, Industrial Arts, or Trades and Industries 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 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.

Regular students who are planning to graduate at the next Commencement should consult their major professor and jointly prepare the "Admission to Candidacy" form not later than the fourth week of the Fall Quarter. Students planning to complete their work by part-time and summer school, should prepare their applications when they still have 25 to 35 quarter hours of work to complete. Students will be admitted to candidacy when the plan of course work presented is found to fulfill all remaining requirements for graduation.

Summary of Requirements for Graduation

For students who will graduate in the spring of 1943, the following requirements must be met after satisfying the requirements for admission. The responsibility for satisfying the requirements for graduation rests upon the student concerned.

1. Six quarters work in Physical Education by men and women, provided that the 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. Men who take the work in Military Science are excused from the Physical Education requirement mentioned in paragraph one (1) above.

The advanced course consists of the third and fourth year of Military Science. Entrance upon the advanced course is elective, but once entered upon, the course becomes a prerequisite for graduation, unless the student shall be discharged in accordance with the provisions of Army Regulation 145-10.

3. One hundred eighty credits of acceptable collegiate work, exclusive of the required hours in Physical Education or Military Science.

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.

6. The completion of the group requirements and of the English composition requirements, English 110, or its equivalent, as explained under Junior college requirements.

Paragraphs 5 and 6 above do not apply to students who are pursuing a prescribed course of study such as in Forestry, Smith-Hughes Teacher Training courses, Engineering, Industries and Trades.

7. Of the 186 hours required for graduation, at least 102 must have been earned in resident courses in some accredited collegiate institution. Resident courses are defined as courses taught on the campus, as a part of the regular

teaching load of the instructor giving the class, and taught as listed in the catalogue or schedule bulletin. Non-resident credits include credits earned through correspondence courses, extension courses, and special examinations. Of the 84 allowable non-resident credits, limitations have been placed on the three groups, as follows: Maximum by correspondence, 37 quarter hours; maximum by extension, 45 quarter hours; maximum by special examinations, 18 quarter hours.

8. Candidates must have been in residence at the Utah State Agricultural College during three full quarters, a full quarter being a quarter in which at least 12 resident credits are earned. Of the last 45 credits presented for the degree, at least 30 must have been earned in residence at the Utah State Agricultural College, and not to exceed 10 quarter hours may have been earned at another accredited institution.

9. Four passing grades, "A," "B," "C," and "D" are employed in reporting credit. No credit with grade lower than "D" can count toward satisfying Credit requirements. The maximum number of "D" grades counting as credits shall be 36 quarter hours.

Grade points have been assigned to grades as follows: 3 grade points for each hour of "A," 2 for each hour of "B," 1 for each hour of "C," zero for each hour of "D." A deduction of one grade point will be made for each hour of failure. For graduation, a student must have as many grade points as he has hours of credit for which grades of "A," "B," "C," "D," and "F" have been assigned.

10. The candidate must file an "Application for Admission to Candidacy" not later than the fourth week of the Fall Quarter preceding graduation. This application must show the course of study to be followed in order to complete all requirements for graduation, and must be approved by:

(a) The professor in charge of the major subject.

(b) The Dean of the school in which the major work is done.

11. The candidate must file an "Application for Graduation" with the Graduation Committee before January 15, containing information requested. Any candidate who fails to file his application for graduation by January 15 may be held over to the next year's commencement.

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

13. Attendance in person at the Commencement and Baccalaureate exercises at which the candidate expects to secure the degree, unless excused in writing by the Graduation Committee for very urgent reasons upon petition from the student.

Requirements for the High School Teacher's Certificate

Students satisfying the following requirements in addition to those for a standard Bachelor's degree will be recommended by the College for the Professional High School Certificate issued by the State Board of Education.

The candidate must have completed a teaching major of at least thirty hours in a subject which is taught in Utah high schools, at least 15 hours of which must be Upper Division work; and a teaching minor of at least 18 hours in a subject which is taught in Utah high schools. Or, in lieu of this major and minor, a composite major consisting of not less than sixty hours credit distributed in three related subjects with not less than eighteen hours in any one subject. The candidate must have completed the following subjects allied to education: 3 hours in School Health Education, 3 hours in Physical Education, and 2 hours in Safety Education. He must have ten hours in each of the four following groups: Language Arts; Physical, or Exact, Science; Biological Science; and Social Science. He must complete at least thirty hours

in professional education including 12 hours in Secondary Observation and Directed Teaching, to include not less than three hours in Principles and Methods of teaching in High School; 3 hours of Organization and Administration of Utah Schools, 3 hours of Educational Psychology, 3 hours of Guidance and Personnel and 3 hours of Articulation of Schools.

GRADUATE STUDY

THE graduate work at the College is administered by the Committee on Graduate Work appointed by the President. Any inquiries concerning graduate work should be addressed to the Chairman of the Committee.

Admission and Registration

Persons who have received the Bachelor's degree from accredited institutions may be accepted for registration as graduate students. Persons wishing to register as graduate students would do well to so inform the Chairman of the Committee on Graduate Work some weeks before the beginning of the school quarter in which they wish to register. In case the student is not a graduate of this college, a transcript of credits for all studies previously completed should be submitted. This will aid materially in getting the work of the student properly arranged when he presents himself for registration. Seniors in the College who lack not more than five credit hours for completion of all requirements for the Bachelor's degree may carry a limited amount of graduate work during their last quarter as undergraduates, provided that the total number of credit hours for which they are registered during that quarter does not exceed sixteen and provided their average grade of all work is "B" or better.

All students registering as graduate students must have their registration cards signed by the Chairman of the Committee on Graduate Work. Graduate students are limited to 16 hours per quarter. Registration as a graduate student does not imply admission to candidacy for an advanced degree. Such admission is granted only on recommendation of a special advisory committee as explained below.

Students who have received the Bachelor's degree but wish to take further undergraduate courses without the purpose of completing requisites for a Master's degree are not required to register as graduate students. They may register with the respective Deans and are not limited in registration as are the graduate students.

Master's Degree

Two plans of study are offered leading to the Master's degree. One plan leads to the Master of Science degree and the other to the degree of Master of Education in one of six designated fields.

Master of Science Degree

The course of study leading to the Master of Science degree has for its purpose the training of the student in his special field of study and in the fundamentals of research in this field. Necessarily, the course of study is highly specialized and all studies must be in the field of the major or closely related fields. The following departments offer work leading to the Master of Science degree:

Agronomy and Soils, including also Soils Chemistry (administered jointly with the Chemistry Department) and Soils Physics (administered jointly with the Physics Department).

Agricultural Economics
Animal Husbandry

Bacteriology
Biochemistry
Botany (Plant Physiology and Plant Pathology).
Chemistry
Dairy Manufacturing (Dairy Chemistry, jointly with the Chemistry Department); Dairy Bacteriology, jointly with the Bacteriology Department).
Economics
Education (Educational Administration, Administration of Industrial Engineering, Arts Education, and Physical Education).
Geology
Departments in the School of Home Economics
Political Science
Range Management
Sociology
Physics
Wildlife Management
Zoology and Entomology

Requirements for Master of Science degree: The procedure to be followed and the requirements to be fulfilled for the Master of Science degree are given in the following numbered steps:

1. Acceptance for registration as graduate student: All persons wishing to register as graduate students must be accepted for such registration by the Chairman of the Committee on Graduate Work and each registration card must be signed by him.

2. Major professor and advisory committee: The student will be assigned by the Chairman of the Committee on Graduate Work to a major professor whose duties shall be to advise the student in planning and prosecution of his course of study and research and make arrangements for examinations. He will be aided by an advisory committee consisting of himself as chairman, and at least two other members chosen from the faculty of the major department or closely related departments. The Dean of the School is ex officio member of all advisory groups.

3. Preliminary examinations: By examinations of the records, of the student's previous work, and by such examinations of the student, oral or written, as they may consider advisable, the advisory committee shall satisfy themselves as to the adequacy of the student's preparation and the advisability of his pursuance of graduate work.

4. Program of study: If the committee is convinced that the preparation and ability of the students are such as to give reasonable assurance of success in advanced studies, then, with him, they shall plan a program of study which will meet all requirements for the Master of Science degree. This program must include in general:

(a) at least three quarters of residence. (Four summer sessions with additional non-residence research may be accepted as fulfilling the residence requirements.) Correspondence work and extension work are not acceptable as part of the 45 quarter hours required for the degree. Graduate work done at other accredited institutions may be accepted. The amount of such credit allowed will be determined in each case in connection with an examination of the whole proposed program of study. In general, not more than 15 quarter hours will be accepted.

(b) At least forty-five credit hours in courses numbered 100 or over in addition to any lower division courses (numbered below 100) which may be necessary to strengthen the undergraduate preparation.

(c) Not more than sixteen hours in any one quarter.

(d) At least ten hours, exclusive of work connected with the thesis, shall be in courses numbered 200 or above.

(e) All courses shall be in the major department or closely related fields.

(f) Registration in English 211 must be included in the program as a part of the preparation of the thesis.

(g) Research and a thesis with nine to fifteen credit hours. Not only the courses to be taken, but the proposed time for completion of the work should also be planned. Any modification of these requirements or other conditions requiring action of the Committee on Graduate Work will be considered only if they are submitted by the applicant's advisory committee as part of his whole proposed program of study.

5. Application for candidacy: Having arranged a proposed program of study and research, the student will submit his plan and make application to the committee on Graduate Work to become a candidate for the Master of Science degree. Forms for this purpose can be obtained at the Registrar's Office.

Those applicants who plan to receive the degree at the end of the Spring Quarter should submit the application not later than the first Friday in the Winter Quarter. In general, the application must be submitted prior to the completion of more than one-third of the work necessary to meet requirements for the degree. Students employed part time at the College, who expect to take two years or more to complete work for the Master's degree, should not wait until the first Friday of the Winter quarter next preceding their graduation to make application for candidacy.

If the student's application for candidacy is approved, additional members may be added to his Advisory Committee by the Committee on Graduate Work. Notice of admission to candidacy, together with a letter of instructions, concerning the thesis form, and final examination, will be sent to the candidate by the Secretary of the Committee of Graduate Work. A form on which to make application for graduation will also be enclosed with the letter. This form calls for the payment of a fee of $10.00 covering the diploma fee and the cost of proof reading and checking the thesis and of binding two copies of the thesis.

6. Completion of the approved program of study and research: Each course given in the program must be completed with a grade of "B" or better.

A semi-final draft of the thesis should be approved by the major professor and members of the advisory committee at least one week before the final examination. The final draft may be completed after the examination. A typewritten and a carbon copy of the final draft, with the signatures showing approval by the major professor and dean of the school, the instructor of English 211, and the Chairman of the Committee on Graduate Work, must be submitted to the Librarian of the College. If the degree is to be received at the June Commencement, this must be done not later than the last Monday preceding commencement.

7. Final Examination: Each candidate will be given a final examination by members of his advisory committee and any other persons especially designated by the Committee on Graduate Work. This examination may be oral or written or both, as his committee may decide. It is open to all faculty members. It will be chiefly on the thesis, but may cover any fundamental knowledge required for the carrying out of the research work or necessary to the conclusions reached. Arrangements for the time and place of the examination are to be made by the major professor. He should notify the Committee on Graduate Work of the arrangements at least one week prior to the time set for the examination. A member of the Committee on Graduate Work will act as chairman at the examination. For candidates who are to receive the degree at the June Commencement, the date of the examination must be not later than May 20. If the examination is passed successfully, and when the

thesis has been submitted to the Librarian, the secretary of the Committee on Graduate Work will present the name of the candidate to the college faculty for approval for the Master of Science degree. He will also send the candidate instructions for attendance at Commencement and any other necessary information.

Delayed Completion of the Proposed Course of Study:

If the student is for any reason delayed in the completion of his proposed plan of study as offered in his application for candidacy, and is unable to complete it in the time proposed, a reasonable extension of time may be granted on the recommendation of the major professor or chairman of the advisory committee.

If the student wishes to renew his position as candidate after the lapse, of a prolonged period of absence from the work, he must satisfy his major professor and advisory committee of his fitness for candidacy and make an application for renewal of his candidacy before resuming his work.

Graduation at the Close of the Summer Session:

All students who satisfy the requirements for graduation by the close of the Summer Session 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 by proper authorities of the College as soon as their work is completed.

Master of Education Degrees

Master of Education in Agriculture

Master of Education in Home Economics

Master of Education in Industrial Arts

Master of Education in Physical Sciences

Master of Education in Social Sciences

Master of Education in Biological Sciences

The course of study leading to each of the Master Education degrees has for its purpose the preparation of thoroughly trained teachers with a broad training in the principles of education.

The field of study is more broad than that planned for the Master of Science degree. Scientific research in the field of the major is not required.

Requirements for the Master of Education degrees:

1. A minimum of one full academic year in residence is required. Four summer sessions with additional intersession and approved non-residence study may be accepted as fulfilling the residence requirement. Students devoting part time to employment should expect to have the time for residence requirements increased proportionate to the extent of such employment.

2. A minimum of forty-five quarter hours of approved upper division or graduate work beyond the Bachelor's degree are required, in addition to any lower division courses (numbered below 100) which may be necessary to strengthen the undergraduate preparation.

3. A maximum of fifteen hours non-resident and part-time residence work may be applied toward filling requirements.

4. A major of not less than eighteen hours in one department or in two closely related departments must be filled.

5. Current requirements for a teaching, administrative, supervisory or other State school certificate must be met.

6. Evidence shall be presented of at least two years successful experience as a teacher, supervisor or administrator.

7. A maximum of sixteen hours credit per quarter may be applied toward the diploma.

8. No course in which the candidate receives a grade below "B" can be applied toward the completion of these requirements.

Eligibility:

1. Only students with an average of 2 grade points ("B" grade) or better in undergraduate work may be admitted to candidacy.

2. The student must have attained graduate standing before credit may be carried to apply toward the Master's degree.

3. To become a candidate, the student must be recommended by his advisory committee and approved by the Committee on Graduate Work.

Procedure:

The procedure to be followed by one wishing to complete requirements for a Master of Education degree is given in the following numbered steps:

1. Acceptance for registration as a graduate student: All persons wishing to register as graduate students must be accepted for registration by the Chairman of the Committee on Graduate Work and each registration card must be signed by him.

2. Advisory Committee, eligibility: The student will be assigned to the appropriate one of the following named committees.

Advisory Committees for Master of Education Degree:

Agriculture:

Dr. R. J. Evans, Chairman
Professor L. R. Humpherys
Dr. Leonard Pollard
Professor H. H. Smith

Home Economics:

Dean C. B. Clayton, Chairman
Professor Florence Thompson
Professor C. E. McClellan

Industrial Arts:

Dr. Willard Gardner, Chairman
Dean G. D. Clyde
Professor Ernest C. Jeppesen
Professor L. R. Humpherys

Physical Sciences:

Dr. Sherwin Maeser
Dr. Leon B. Linford
Dr. J. Stewart Williams
Dr. M. T. Bird
Dr. Arden Frandsen

Social Sciences:

Professor P. E. Peterson, Chairman
Dr. J. E. Ricks
Professor J. Symons
Dean W. L. Wanless
Dr. John C. Carlisle

Biological Sciences:

Dr. J. E. Greaves, Chairman
Dr. Frank B. Wann
Dr. Datus Hammond
Dean E. A. Jacobsen

By examination of the records of the student's previous work and by such examinations of the student, oral or written, as they may consider advisable, the advisory committee shall satisfy themselves as to the eligibility of the applicant, the adequacy of his preparation and the advisability of his work for a Master of Education degree.

4. Program of Study: If the committee finds the student eligible and is convinced that the preparation and ability of the student are such as to give reasonable assurance of success as an advanced student and as a teacher, then, with the student, they will plan a program of study. This program of study will be planned to give a broad fundamental preparation in the major field of study and a thorough training in principles and methods of education.

5. Application for candidacy: Having arranged for a proposed program of study, with the advisory committee will submit its report to the committee on Graduate Work with a recommendation that the applicant be admitted to the candidacy for the Master's degree. For those applicants who plan to receive the degree at the close of the Spring Quarter, this report of the advisory committee should be submitted not later than the first Friday of the Winter Quarter. In general, the report must be received by the Committee on Graduate Work at least three months before the degree is granted.

If the application for candidacy is approved, the student will be notified by letter. A form on which to make application for graduation will be enclosed with the letter. This form calls for the payment of a diploma fee of $5.

6. Completion of the approved program of study: Each course given in the program must be completed with a grade "B" or better.

7. Final Examination: Each candidate will be given a final examination by members of his advisory committee and any other persons especially designated by the Committee on Graduate Work. This examination may be oral, written or both, as the committee may decide. It is open to all faculty members. Arrangements for the time and place of the examination are to be made by the chairman of the advisory committee. He should notify the Secretary of the Committee on Graduate Work of the arrangements at least one week prior to the time set for the examination. For candidates who are to receive the degree at the June Commencement, the date of the examination must not be later than May 20.

If the examination is passed successfully, the Secretary of the Committee on Graduate Work will present the name of the candidate to the college faculty for approval for the degree of Master of Education in the field of major study. He will also send the candidate instructions for attendance at Commencement Exercises and any other necessary information.

Delayed Completion of the Proposed Program of Study:

If the student is for any reason delayed in the completion of his proposed plan of study as offered in his application for candidacy and is unable to complete it in the time proposed, a reasonable extension of time may be granted on the recommendation of the chairman of his advisory committee. If the student wishes to renew his position as candidate after the lapse of a prolonged period of absence from the work, he must satisfy his advisory committee of his fitness for candidacy and make an application for renewal of his candidacy before resuming his work.

Graduation at the Close of the Summer Session:

All students who satisfy the requirements for graduation by the close of the Summer Session 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 by proper authorities of the College as soon as their work is completed.

STUDENT EXPENSES

1942-43

RESIDENT STUDENTS

	Three Quarters	Winter and Spring	Fall Only	Winter Only	Spring Only
Registration Fee	$10.00	$10.00	$10.00	$10.00	$10.00
Tuition	51.00	34.00	17.00	17.00	17.00
Student Body	12.00	8.00	9.00	8.00	5.00
Class Fee	1.00	1.00	1.00	1.00	1.00
Building Fee	6.00	4.00	2.00	2.00	2.00
	$80.00	$57.00	$39.00	$38.00	$35.00

If a resident wishes to attend all three quarters but pay fees on a quarter basis, the payments are divided as follows: Fall, $39; Winter, $22; Spring, $19; making a total of $80.

NON-RESIDENT STUDENTS

	Three Quarters	Winter and Spring	Fall Only	Winter Only	Spring Only
Registration Fee	$55.00	$55.00	$55.00	$55.00	$55.00
Tuition	51.00	34.00	17.00	17.00	17.00
Student Body	12.00	8.00	9.00	8.00	5.00
Class Fee	1.00	1.00	1.00	1.00	1.00
Building Fee	6.00	4.00	2.00	2.00	2.00
	$125.00	$102.00	$84.00	$83.00	$80.00

If a non-resident student wishes to attend all three quarters but pay fees on a quarter basis, the payments are divided as follows: Fall, $84; Winter, $22; Spring, $19; making a total of $125.00.

The fees listed above with the exception of the student body fees are the minimum fees required by state law. According to an act passed by the Legislature, all legal residents of Utah who enter the College must pay a registration fee of $10, and, in addition, they must pay a tuition fee of $17 per quarter. Students who are not legal residents of the state are required to pay a registration fee of $55, covering the entire year in addition to the tuition fee of $17 per quarter.

Students who are unable to pay the full amount of each quarter's fees are urged to make financial arrangements with financial institutions or with personal friends. In very special cases, students are allowed to sign notes for part of the fees, but this practice is discouraged. A carrying charge fee of $2.00 will be made for each note signed.

SPECIAL FEES 1942-43

Agricultural Economics 70, 102, 106, 113b, 114, 116, 121, 202, each	$ 1.00
Automotive Department, Auto. 11a, 12a, 13a, 14a, 15a, 16a	3.00
Auto 41a, 42a, 43a, 44a, 45a, 46a	15.00
Auto. 91, 92, 93, 191, 192	10.00
Children's Literature 24	1.50
Child Guidance 60	2.00
Education 125	1.00
Evening Trade Extension Welding	10.00
Foods 9	1.50
Foods 106	1.50
Clinical Psychology 103b	.50
Radio Courses, R. A. 1a, 2a, 3a, 11a, 12a, 13a, 23, 24, 25, 84, 85, 89, 101, 120, 124, 125, 126, 128, 129	1.00
Note fee, per note	2.00
Locker rental	1.50
Late registration, per day (maximum $5.00)	1.00
Teacher placement fee	2.00
Teacher placement re-registration	1.00
Military suit deposit	5.00
Graduation fee	5.00
Master degree fee for binding and proofing thesis	5.00
Registration as listener in lecture course in which no credit is derived, per subject	5.00

50c per credit hour fee (maximum $5.00 for the year) in the following classes:

Automotive Department, Auto. 51, 52, 53, 61, 62, 151, 152, 153, 162.

Bacteriology: 2, 101, 104, 106, 112, 116, 120, 207.

Botany: 21, 22, 23, 30, 104, 108, 110, 116, 117, 120, 130, 131, 135, 140, 150, 151, 160, 161, 162, 221.

Chemistry: 3, 4, 5, 10, 11, 12, 15, 102, 103, 107, 108, 109, 110, 111, 116, 120, 121, 122, 123, 124, 133, 140, 240.

Dairy Manufacturing: 5, 101, 103, 151, 152, 153.

Farm Machinery Repair: A. E. 13.

Metals Department, M. W. 40, 41, 42, 51, 52, 53, 151, 152, 153, 181, 182, 183. 153, 181, 182, 183.

Physics: 6, 7, 20, 21, 22, 108.

Practice Teaching: 106, 122, 126, 128, 129, 176.

Woodwork Department, W. W. 61, 62, 63, 64, 65, 66, 72, 160, 161, 162, 163, 170, 171, 172, 173, 174.

Zoology: 3, 4, 13, 14, 101, 102, 103, 104, 105, 106, 116, 117, 118, 119, 121, 122, 140, 155.

1c per mile for field trips in Forestry, Range and Wildlife courses as designated in course descriptions.

Graduate students not in residence and wishing to file thesis credit not to exceed 15 hours shall pay a fee of $10.00.

Special examinations may be taken in subjects not registered for, on approval of a special examinations committee, and upon payment of $2.00 per credit hour.

After the first week of each quarter, students changing registration must pay 50 cents for adding and 50 cents for dropping a subject.

Registration is not completed until the student has presented his fee card at the cashier's window, Secretary's Office, and settled for his fees, and filed his registration cards with the Registrar's office.

All students, when paying fees, are given official receipts from the Secretary's Office. These receipts must be presented before refunds are allowed. The students, therefore, should exercise care that the receipts are not lost or mislaid.

All fees except registration fee will be refunded to any student withdrawing from school by the end of the third week of the quarter. No refunds are allowed after the third week.

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, basketball, tennis and track—dramatics and musical entertainments, socials, lectures, etc., and, in addition, give him a copy of the annual yearbook and a 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 women students are required to take Physical Education, they must provide themselves with gymnasium suits and gymnasium shoes. The cost is about $3.00.

Each student in Foods and Dietetics, Home Nursing and Household Administration 150, must provide herself with the following: Two washable white uniforms.

The fee for Course 150—General Home Economics which is required for Vocational Home Economics certification is $35.00 for the one-half quarter residence in the Home Management House.

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

Good board and room in private homes costs from $5.00 to $7.00 a week. By renting rooms and boarding themselves, students are able to reduce considerably the cost of room and board.

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

SELF-HELP

A large number of students of the Utah State Agricultural College earn part of their expenses while in residence. The College itself gives employment to many students, and college officers are glad to be of reasonable assistance to students in finding work.

Young people who expect to earn part of 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, if possible, that this sum be sufficient to cover the expenses of the first year. Correspondence or conference

with College officials sometimes reveals some way to earn the additional amount needed. The College cannot, of course, guarantee employment to all deserving and needy students. It is an institutional policy, however, to keep all college costs as low as possible in order that capable and worthy students may have the opportunity of college training.

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.

TEACHING ASSISTANTSHIPS

Several teaching assistanships in various departments of the Institution are available each year to graduate students. Students must apply to the department which offers the assistantships in which they are interested. For the coming year, 1942-43, these assistantships will carry remuneration of $400 plus remission of resident fees. At the present time they are available in the following departments:

Agricultural Economics, Botany, Bacteriology and Biochemistry, Economics, Geology, Physics, Chemistry, Zoology and Entomology, Dairy Manufacturing, Sociology, Irrigation and Drainage, Physical Education, Foods and Dietetics, Child Development, and Engineering, Industries and Trades.

SCHOLARSHIPS AND AWARDS

THE **Johansen Scholarship Fund** of $5,000, a gift of the late Mrs. Johana Johansen, provides six scholarships annually, worth in the aggregate from $250 to $300, for help of worthy students of Junior or Senior rank. Applications for this scholarship for the succeeding year must be filed with the chairman of the Awards and Honors committee on or before April 1.

The 1927 Class Gift to the College yields an annual income sufficient to provide two scholarships of $125 each. Application should be made by Juniors to the Awards and Honors Committee on or before April, 1. Application must be accompanied by an approved outline of a proposed study project to be completed during the senior year and submitted to the Awards and Honors Committee not later than April 15. Two copies of the complete thesis are to be filed in the College library.

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

Rotary Club Senior Loan Fund. The Logan Rotary Club has provided a special loan fund to assist Seniors in meeting their expenses during the last year of their college course. Further information may be obtained from Mr. N. D. Salisbury, First Security Bank, Logan, or the chairman of the Awards and Honors Committee.

The College Award is conferred annually upon the male student of the institution who shows evidence of being able, in greatest measure, to repay 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, com-

bining 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 of character (50 points).

A College Award is also conferred annually upon the women 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. A number of candidates for the Rhodes Scholarships in Oxford University, England, are selected each year from the State of Utah. The scholarships are of the value of $2,000 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, science 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 Sherwin Maeser, chairman of the Rhodes Scholarship Committee. Students who wish to apply for these scholarships are advised to start preparing for them in the freshman year. They are usually given to Seniors or graduate students.

The American Legion Military Medal: A gift of the Logan American Legion Post, is awarded each year to the letterman who maintains the highest scholastic record during the year, and who exhibits the most wholesome attitude towards Military training.

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 Sons of the American Revolution Medal: A gift of the National Society of the Sons of the American Revolution, is awarded each year to the non-letterman, who is a member of the R. O. T. C., and has shown the greatest interest in his military work.

The Phi Upsilon Omicron Scholarship of $25.00 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:

(a) Scholarship.
(b) Participation in student activities.
(c) Service and cooperation.
(d) Leadership.
(e) Moral character.
(f) Judgment and reliability.

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

Alpha Kappa Psi Scholarship Award. Alpha Kappa Psi Fraternity, Alpha Theta Chapter of which is established at the Utah State Agricultural College,

awards annually the Alpha Kappa Psi Scholarship Medallion to the male student of the Junior Class in Commerce who possesses the highest scholastic average for three years of work taken in this college.

The Home Economics Awards—Certificates of merit conferred annually to senior women in Home Economics adjudged worthy by faculty and Senior students upon the following basis:

(a) Application of Home Economics ideals to daily living, 50 points.

(b) Leadership in class work and other activities, 50 points.

The number of awards shall not exceed 5% of the total graduating class. The candidates eligible shall have a grade point average of two or better.

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.

Scholarship A's in the form of gold pins are given at the Scholarship and Awards Assembly to the students who have fifteen quarter hours or more of academic credit in residence work at the College for the Fall and Winter Quarters of the current year in addition to the previous Spring Quarter. All grades must be "A" and basic Physical Education and basic Military Science cannot be included in the fifteen hours per quarter.

Theta Chi Award. Ten dollars is awarded annually by the Theta Chi Women's Business Fraternity to the Junior girl registered in the Secretarial Science department who has the highest scholastic record in Commerce.

Delta Beta Chi Award. Ten dollars is awarded annually by the Delta Beta Chi Chemistry Fraternity to the Freshman or Sophomore Chemistry student who writes the best essay on some subject in the field of Chemistry.

The William Alger Award. A gold key is awarded annually by Alpha Epsilon Delta, premedical society, to the outstanding Freshman premedical or predental student. Scholarship, character and possibilities in the field of medicine or dentistry represent the basis for the award.

Awards Offered in the Graduate Division of Social Work

Louisa Y. Robinson National Women's Relief Society Scholarship. A gift of $5,000 has been made to the college by the General Board of the National Women's Relief Society for the purpose of creating a perpetual fund bearing the name of Louisa Y. Robinson, the annual earnings of which are to be given to a Latter-day Saint woman student eligible for admission to the Graduate Division of Social Work.

One Graduate Tuition Scholarship of $80.00 is available to a student meeting the requirements for admission to the Graduate Division of Social Work.

The Bear River Mutual Fire Insurance Company offers three awards of $50.00, $30.00, $20.00 for the best essays on the subject of "Cooperative Fire Insurance."

An Annual Scholarship of $25.00 will be awarded by the Chi Omega Fraternity to the girl majoring or minoring in the Social Sciences who gives evidence of superior scholarship, and ability to make a contribution to organized group life; and who writes the best 2,000-word essay on a subject to be approved by a committee before the close of the fall quarter and to be finally submitted not later than April 15.

The Committee of Awards shall be appointed by the Chi Omega Fraternity, each year from the teaching staffs of the departments of Sociology and Economics.

Awards and Scholarships Offered in School of Agriculture

The Leadership Challenge Cup is a gift to the College by Kenneth C. Ikeler and is to be awarded each year to a Senior student in Agriculture who has exhibited the greatest measure of constructive organization and leadership in the School of Agriculture through his College course.

Sears Roebuck and Company Scholarships:

For Freshmen in the School of Agriculture the company offers 25 scholarships of $100 each, $50 of which is paid at the beginning of the fall term and $25 at the beginning of the winter and spring terms. Winners are determined on the basis of scholarship, financial need, interest in agriculture, citizenship, moral integrity and rural leadership. The winner of this award who has the best scholarship record at the end of his freshman year will receive an additional scholarship of one or two more years. All applications must be submitted to the Dean of Agriculture before June 1. Application blanks and additional information may be obtained from the Dean's office.

For a graduate student in animal husbandry, a fellowship for research in sheep breeding with an annual stipend of $450 is given. Applications for this fellowship should be sent to the Dean of the School of Agriculture before April 1.

For graduate students in vocational agriculture, two fellowships of $200 each are offered to prospective teachers with outstanding records in scholarship and leadership to do graduate work in preparation for teaching agriculture.

Agricultural Experiment Station Research Fellowships. A number of the departments of the Agricultural Experiment Station offer annually one or more research fellowships for graduate students properly qualified to assist in conducting original research. Holders of these fellowships are permitted to carry on graduate work toward the master's degree. The annual stipend varies from $400 to $600.

Canning Crops Research Fellowship. This fellowship is sponsored by the Utah Canners' Association, the American Can Co., the Anaconda Sales Corp., the American Potash Institute and the Nitragin Co. It is awarded annually to a graduate student who is qualified to proceed with research work in soil fertility and canning crops investigations. It pays an annual stipend of $600.

Utah Agricultural Marketing Service Fellowship for graduate research in the marketing of fruits and vegetables. This fellowship carries a stipend of $500.

The Rolla M. Rich Memorial Scholarship yields each year the interest from a $1,000 endowment fund established by Mrs. Emily Mathews Rich, in memory of her son, Rolla M. Rich, a former student of the College. The sum is awarded annually to an outstanding student of the senior college who is a member of both Delta Phi and the Agricultural Club. Selection is made by the President of the College, the Director of the Institute, and the Dean of Agriculture. Equal emphasis is placed on character, scholarship, and leadership in agriculture.

Applications for these fellowships should be filed with the Dean of the School of Agriculture on or before April 1.

The Danforth Summer Fellowship is awarded jointly by the Danforth Foundation and the Ralston Purina Mills to an outstanding member of the Junior class in the School of Agriculture. The award covers expenses for two weeks in St. Louis and vicinity, and two weeks of leadership training at the American Youth Foundation Camp on Lake Michigan. Forty students from as many colleges are awarded this fellowship. Additional information and application blanks may be obtained from the Dean's office.

Swift and Company Essay Contest. Each year the Swift and Company conducts an essay contest, the winner of which is awarded a free trip to Chicago at the time of the International Livestock show where he will spend approximately a week studying the various phases of the meat packing industry. All essays must be submitted in the Dean's office on or before November 1. Further additional information concerning this contest may be obtained from the Dean's office.

The American Rambouillet Sheep Breeders' Association Challenge Cup was donated to the Animal Husbandry Department by the American Rambouillet Sheep Breeders' Association, to be presented each year to the student showing the greatest efficiency in fitting and showing Rambouillet sheep.

The Ogden Union Stock Yards Challenge Cup is a gift to the College by the Union Stock Yards Company of Ogden and is to be awarded each year to the student who shows the most proficiency in the judging of beef cattle.

The Hawaiian Steam Ship Company's Challenge Cup is a gift from the Hawaiian Steam Ship Company and is to be awarded each year to the student who shows the most proficiency in the judging of wool.

The Salt Lake Union Stock Yards Company Challenge Cup is a gift to the College by the Union Stock Yards Company of Salt Lake City, and is to be awarded each year to the student who shows the greatest proficiency in the judging of hogs.

The John K. Madsen Challenge Cup is a gift to the College by John K. Madsen, Mt. Pleasant, Utah, and is awarded each year to the student who shows the most proficiency in the judging of sheep.

STUDENT ORGANIZATIONS

Government and Traditions of 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 encourages all students to participate in a limited number of college activities. A point system of awards to recognize participation in all non-athletic activities encourages high scholarship during participation by means of graduated bonuses for higher scholarship. The organization provides each member with a maximum of proper athletic, theatrical, and social recreation at a minimum expense. This organization has control, with faculty cooperation, of the following student activities:

1. a. Athletics, for men.

   b. Athletics for women.

An intramural program, including all seasonal sports for which awards are given, is conducted.

2. Musicals, including all public performances of the Band, the Orchestra, and Musical Clubs. These organizations present several concerts during the year and each group usually tours some part of the surrounding area.

3. Theatricals. There is great activity in the field of the drama, and numerous productions are staged each year by student groups. Students participate in the lighting, staging, directing, and managing, as well as the acting. The performances of recent years have been of high quality.

4. Opera. Each year the music department produces an opera. With successful trials at classics such as Rigoletto, Faust, Aida, Il Trovatore, Student Prince, Carmen, and Blossom Time, grand opera has become traditional at Utah State.

5. Debating and Public Speaking. Debating is an extremely popular activity, drawing approximately thirty participants each year. The College is a member of the Rocky Mountain Forensic League and each fall meets schools of this group in debate, oratory, extemporaneous speaking, after dinner speaking, and panel discussion. Participation in the Utah-Idaho Junior College Forensic League and in debate tournaments on the Pacific Coast provides ample opportunity for experience in tournament debating. Intrastate debaters are held in the form of a state legislature and are highly successful.

6. Student Publications. The students of the College publish a weekly school paper, "Student Life," and the College yearbook, "The Buzzer," both of which are distributed to all of the regularly registered students. Some campus organizations also sponsor publications of their own such as the literary magazine, "Scribble," and the Forestry Club's "Juniper."

7. Lyceum Course. The lyceum program which brings numerous national and international figures to the College is one of the most important Student Body activities.

8. Dances and Entertainments. At frequent regular intervals, the Student Body Organization sponsors all-college dancing parties, informal and formal in nature, and regular student body assemblies which provide extensive expression for all student talent. Students with talent and interest in such participation should register with the student Public Service Bureau.

STUDENT HEALTH SERVICE

The College is interested in the physical welfare of its students. Services of a doctor and a full time registered nurse are available free of charge to the students. Each new student, upon entering the College, receives a thorough medical examination, and whenever necessary, students are re-examined and advised regarding their physical condition.

SPEECH CLINIC

Remedial training is available for those individuals possessing speech handicaps. The types of problems handled include stuttering or stammering, stage fright, slow speech development in children, baby talk, lisping and other disorders of articulation, cleft palate and hare lip, speech, paralytic speech, foreign accent and dialectic speech, "nervous" speech conditions, nasal speech, high or thin voices, etc. All college students who have defective speech should register with the speech clinic where they will receive immediate attention. This training is also available to non-college students.

SPECIAL CARE OF YOUNG WOMEN

Each sorority house is supervised by a competent house mother who concerns herself with the welfare of the women who are living at the house. The house mother is directly responsible to the Dean of Women who, in turn, is responsible for the conduct of women students and supervises their living quarters. Women living at the Women's Residence Hall and the N. Y. A. Residence are under the guidance of matrons responsible to the Dean of Women. The Dean of Women entertains an active continuing interest in the welfare of the women.

CAMPUS ORGANIZATIONS

Fraternities, Honorary. Alpha Epsilon Delta (pre-medical), Alpha Kappa Psi (commerce, men), Alpha Zeta (agriculture, scholastic), Blue Key (service), Delta Phi (mission service), Lambda Rho (journalistic, women), Xi Sigma Pi (forestry, scholastic), Phi Kappa Phi, (scholastic, co-educational), Phi Upsilon

Omicron (home economics, scholastic), Pi Gamma Mu (social science), Scabbard and Blade (military, men), Sponsors (militiary, women), Theta Alpha Phi (dramatic, co-educational), Theta Chi (business, women), Fourth Estaters (journalistic, co-educational).

Fraternities, Social. Beta Kappa, Lambda Chi, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon.

Sororities, Social. Alpha Chi Omega, Chi Omega, Kappa Delta, Spurs (service, sophomore women), Theta Upsilon.

Clubs. Ag Club (agriculture), Ag Econ, Agora (debating), Associated Women Students, Independent Students' Association (unaffiliated students), Civil Engineers, Empyrean (literary), 4-H Club (social), Foresters, Home Economics Club (home economics majors), Inter-Collegiate Knights (service, men), International Relations Club (discussion group), Ladies' Glee Club, Men's Glee Club, Phrateres, Women's Athletic Association.

The officers of the Dean of Men and Dean of Women, in conjunction with other members of the Committee on Social Affairs, render specific aid to all organizations in their financial planning.

SCHOOL OF AGRICULTURE

R. H. WALKER, *Dean*

Departments

Agriculture 80

Agricultural Economics and Marketing 81

Agronomy and Soils 84

Animal Husbandry 88

Bacteriology and Biochemistry 90

Botany and Plant Pathology 92

Dairy Husbandry and Manufacturing 94

Horticulture 97

Landscape Architecture 98

Poultry Husbandry 101

Vegetable Crops 102

Veterinary Science 102

General Information

IN war as in peace, agriculture is fundamental to the life of a nation. In order for agriculture to keep pace with the increasing demands now made upon it, it must have trained personnel in progressive farming, in marketing, in research, in extension work, in teaching, and in the various commercial fields connected with it. New materials are needed to take the place of those no longer available because of the war. Better production methods, higher yielding varieties of crops and breeds of livestock, better methods for the control of pests and diseases are all essential to an increased production program, so necessary to the winning of the war and maintaining the high morale of the people, as well as for the rehabilitation of the starving peoples of the world after the war is over. These problems must be solved by men trained in agriculture. Thus, a great opportunity and a challenge is open to those students with vision who have an interest and an aptitude for agriculture and who are willing to prepare themselves properly.

The Utah State Agricultural College is well equipped to train young men to meet these needs. Along with the technical courses in crop and animal production, agricultural economics and rural social science, soil management, and others, instruction is offered in mechanic arts and in the basic sciences that underlie practical agriculture. Training is also given simultaneously in English, literature, history, political science, music and the fine arts, hygiene and public health, education and the social sciences, all of which supplement the practical and scientific agricultural training and contribute to the general education of students to a level comparable to that attained by students in other fields.

Instruction includes not only the principles, but also the practice of agriculture. The College farms, dairy manufacturing plant, livestock barns, plant breeding plots, gardens, orchards and technical equipment offer an excellent opportunity for the combination of scientific study and practical experience. Outstanding representatives of the principal livestock and poultry breeds best adapted to Utah conditions afford a "standard of perfection" in desirable type and form for the student judge.

The College maintains one of the outstanding breeding herds of Hereford cattle in the Intermountain west made up of the bull, Advance Domino III, donated to the Utah Cattle and Horse Growers' Association by Sears Roebuck and Company, and thirty-five breeding females. The College also has a small, but good quality, herd of beef Shorthorn cattle. The College dairy herd is made up of purebred Jersey, Guernsey and Holstein-Fresian cattle. Five registered Percheron mares and two registered Percheron stallions, a small herd of Duroc hogs, Rambouillet, Corriedale, Columbia, Hampshire and Southdown breeds of sheep offer teaching material for classes in animal husbandry, and in addition many students are given experience in the care and handling of the livestock.

The Agricultural Experiment Station is bringing to light better methods of feeding, more productive systems of cropping, more valuable strains of fruits, crops and livestock, more remunerative systems of marketing agricultural products, and other improvements. These investigations are studied by the students first hand, and through the system of student employment, a number take an active part in conducting the research work of the Experiment Station. This arrangement gives, to the students, clearer insight into scientific methods and, at the same time, valuable, practical experience. Special attention is given to improved methods in all the various operations of farming and farm building in the use of tools and machinery, and in the management of livestock and crops.

The great practical value of the various curricula of the School of Agriculture is shown by the records of those students who have completed them and who have gone back to the farm, or who, after graduation, have taken up the work of specialists as teachers or investigators. Such men are proving themselves leaders in their chosen lines of work.

Students entering the School of Agriculture may pursue either of four courses leading to the degree of Bachelor of Science in Agriculture.

COURSE IN GENERAL AGRICULTURE

The course in general agriculture is designed to meet the needs of those students who desire a broad general training in scientific and practical agriculture, and wish to qualify for general farming, for extension service, county agent, or agricultural inspection work, or other types of general agriculture. The curriculum for this course is partially prescribed as outlined on this page.

Unless the student has definitely determined the specific phase of agriculture in which he wishes to major it is usually best for him to follow the curriculum in general agriculture. Then, at a later date, if he should decide to major in one of the special fields, he can arrange to do so without serious complications.

COURSE OF STUDY FOR MAJORS IN GENERAL AGRICULTURE

The student majoring in general agriculture will be required to take at least six hours in basic agricultural courses each quarter during his freshman year. The prescribed courses and minimum number of hours in the various fields are as follows:

(a) **Minimum Requirements in Following Divisions:**

	Hours
Agricultural Economics	9
*Plant Sciences	26
**Animal Sciences	26
†Agricultural Engineering	9
TOTAL	70

(b) **Exact Science, Biology, General Social Science, and Languages.**

	Hours	Total
EXACT SCIENCE		
Math. 34, and 35	8	
Chem. 10, 11 & 12 or equiv.	15	23
BIOLOGY		
Botany 21 & 22 or 12	6 or 5	
Bacteriology 1 & 2, or	5	
Zoology 2, or		
Physiology 4	5	
Zoology 108	4	
Botany 130	5	24 or 25
GENERAL SOCIAL SCIENCE		
Soc. 10 or Pol. Sci. 10, or Hist. 17	3 or 5	
Agr. Econ. 53a & 53b	6	9 or 11
LANGUAGES AND ART		
English 10 & 110	9	
Language and Arts Group	8	17
TOTAL		75 or 76

Total hours prescribed	146
Elective	40
	186

*Not more than 15 hours of the 26 to be taken in one department, and the total of 26 hours to be selected from the four departments: Agronomy, Horticulture, Landscape Architecture and Vegetable Crops. Soils 6 or 106 is required as part of the 26 hours.

**Not more than 15 hours of the 26 to be taken in one department, and the total of 26 hours to be selected from the four department: Animal Husbandry, Dairy Husbandry and Manufacturing, Poultry Husbandry, and Veterinary Science.

†Agricultural Engineering 10 is required as part of the 9 hours.

SUGGESTED COURSES FOR MAJORS IN GENERAL AGRICULTURE

AGRICULTURAL ECONOMICS

	Hrs.
70—Farm Accounts	3
102—Prin. of Farm Mgt.	3
106—Land Economics	5
110—Marketing Agr. Prod.	3
113—Coop. Marketing	3
120—Agricultural Prices	3

PLANT SCIENCES

Agronomy:	
6 or 106—Gen. Soils	5
1—General Farm Crops	3
101—Cereal Crops	3
102—Root & Misc. Crops	2
103—Forage Crops	4
108—Soil Management	3
118—Weeds	2
Horticulture:	
1—Tree Fruit Prod.	4
8—Small Fruit Prod.	3
Vegetable Crops:	
1—Veg. Prod.	4
105—Major Veg. Prod.	4
Landscape Architecture:	
3—Elem. Lands. Arch.	3
Range Management:	
160—Prin. Mg. Range Lands	5

AGRICULTURAL ENGINEERING

	Hrs.
11—For. & Bench Met.	2
15a—Farm Mach.	3
10—Irrig. Prin. & Pract.	4
105—Woodwork	5
14a—Farm Motors	3

ANIMAL SCIENCES

Animal Husbandry:	
1—Introduction to An. Hus.	3
10—Feeds & Feeding	3
15—Animal Breeding	3
100—Livestock Prod.	5
Dairying:	
1*—Gen. Dairy	3
3—Gen. Dairy Ind.	3
6—Market Milk	3
109*—Dairy Prod.	3
110—Dairy Prod.	5
Poultry:	
101, 102**—Poultry Prod. & Lab.	4
Veterinary Science:	
10—Vet. Science	5
52—Clinic	1

*Students taking Dairy 1 need not take 109.

**Students taking Poultry 1 & 2 need not take 101 & 102.

COURSES IN SPECIALIZED AGRICULTURE

A student may choose to major in one of the following departments: Agricultural Economics and Marketing, Agronomy and Soils, Animal Husbandry, Bacteriology and Biochemistry, Botany and Plant Pathology, Dairy Husbandry and Manufacturing, Horticulture, Landscape Architecture, Poultry Husbandry, Vegetable Crops or Zoology and Entomology. Information concerning the curriculum for a major in any one of these departments may be obtained from the head of the major department, who should be consulted before registering.

In order to major in these departments, the student must obtain certain basic training and a general view of the entire field of agriculture and meet the requirements of the department in which he chooses to major. To achieve this background and basic training, the student is required to take at least 6 hours in basic agricultural courses each quarter during his freshman year. During the four-year period he must complete at least three credits of basic work in each of the following departments:

Agricultural Economics and Marketing	Horticulture
Agronomy and Soils	Landscape Architecture
Animal Husbandry	Poultry Husbandry
Dairy Husbandry and Manufacturing	Vegetable Crops

He must also complete the following courses:

Mathematics 34 and 35
Chemistry 10, 11, 12, or 3, 4, 5
Botany 21 and 22 or 12
Zoology 2, or Bacteriology 1 and 2, or Physiology 4
Agricultural Economics 53a and 53b
Sociology 10 or 70, or Political Science 10, or History 17
Language and Arts, 8 hours
English 10 and 110
Agronomy 6 or 106
Agricultural Engineering 10

A total of 186 hours, 54 of which are of senior college grade, are required for graduation from the School of Agriculture.

COURSE IN VOCATIONAL AGRICULTURE

This course of study is designed to meet the needs of those students who are planning to teach vocational agriculture in rural high schools. In this curriculum, emphasis is given to practical farm experience and broad general training in the basic fields of agriculture and a consideration of the methods and techniques of training youth and adults in the vocation of farming. To be a successful teacher of vocational agriculture, an individual should enjoy public service, have the ability to work with people and influence their lives, complete a broad training in the major enterprises of agriculture, profit by a rich experience in farming. and know how to teach.

The broadness and extent of the training is such that this program is prescribed for the most part. To qualify for certification to teach vocational agriculture in a majority of the western states, the candidiate must complete courses in the several fields of agriculture with the following minimums:

Agricultural Economics	15 hours
Animal Production	30 hours
Crop Production	30 hours
Farm Mechanics	15 hours
	90 hours

PRESCRIBED COURSE OF STUDY FOR MAJORS IN VOCATIONAL AGRICULTURE

	Hrs.	Tot.
Exact Science:		
Math 34, Algebra	3	
Chem. 10, 11, 12	15	18
Biological Science:		
Botany 21, 22, or 12	6 or 5	
Bact. 1 & 2 or Zoo. 2 or Physiology 4	5	19
Zoology 108, Agr. Ent.	4	or
Physiology 108	5	20
Social Science:		
Psychology 3, Elem.	5	
Soc. 10, Rural Soc., or Political Science 10, or History 17	3 or 5	9
Psychology A	1	11
Language and Arts:		
English 10, 110, 112	12	
Elective	3	15
Military Science & P. E.:	6	6
Plant Production:		
Agron. 6, Soils	5	
Agron. 101, Cereal Crops	3	
Agron. 102, Root Crops or Veg. Crops 1	2 or 4	
Agron. 103, Forage Crops	4	
Agron. 108, Soil Mgt. or Agron. 118, Soil Fert.	3 or 4	
Hort. 1, Tree Fruit Prod.	4	28
Irrig. 10, Prin. & Pract.	4	or
Land. Art. 3, El. Land. Arch.	3	30

	Hrs.	Tot.
Agricultural Economics:		
53a, 53b—Prin. Ag. Econ.	6	
70—Farm Accts.	3	
102—Prin. Farm Mgt.	3	
113a—Farm Cooperatives, or 110—Mark. Agr. Prod. or 105—Agr. Finance	3	15
Agricultural Engineering:		
11—Forg. & Bench Metal	2	
15a—Farm Machinery	3	
105—Farm Wdwk. & Bldgs.	5	
14a—Farm Motors	3	
13—Farm Mach. Rep.	2	15
Animal Production:		
An. Hus. 1, or 130	3	
An. Hus. 5 or 165 Lvstk. Judg.	3	
An. Hus. 10, Feeds & Feeding	3	
An. Hus. 15, An. Breeding	3	
An. Hus. 100, Lvstk. Prod.	5	
Vet. Sc. 10, Vet. Science	5	
Vet. Sc. 52, Vet. Clinic	1	
Poultry 1 & 2 or 101 & 102	4	
Dairy 110, Dairy Prod.	5	32
Education & Psychology:		
Psychology 102 & 102b	5	
Ed. 112, Prin. of Voc. Ed.	3	
Ed. 113, Voc. Guidance	3	
Ed. 114, Org. & Ad. Sec. Ed.	3	
Ed. 125, Meth. Teach, Agr.	5	
Ed. 126, Pr. Teach, in Agr.	8	27
Elective	14-16	
TOTAL	200	

TECHNICAL COURSES IN AGRICULTURE

In order to meet the requirements of students who plan to do graduate work or to enter into a field of employment where technical training is required, a technical course is provided in each of the following fields: Agricultural Economics, Animal Husbandry, Bacteriology, Botany, Crops, Dairy Husbandry, Dairy Manufacturing, Horticulture, Landscape Architecture, Poultry Husbandry, Soils and Vegetable Crops. Students may register for these courses only upon permission and on the advice of the head of the department and permission from the Agricultural Council. Minimum requirements of six hours each in Plant Industry, Animal Industry and Agricultural Economics must be met by students taking these courses.

NON-DEGREE COURSE IN AGRICULTURE

The School of Agriculture also offers a two-year non-degree course in practical agriculture for those students who do not wish to take more than two years of college work. A student may register for any of the regular non-prerequisite production, marketing and management courses in the School of Agriculture. Emphasis in these courses is placed on the practical problems confronted on the farm.

SUGGESTED COURSES OPEN TO STUDENTS IN THE NON-DEGREE COURSE IN AGRICULTURE

Agricultural economics 53a & 53b, 70, 102, 110
Agricultural engineering 10, 14a, 15a
Agronomy 1, 6
Animal husbandry 1, 10, 15
Dairy husbandry 1, 3
Horticulture 1, 8
Landscape architecture 3
Poultry husbandry 1 & 2
Vegetable crops 1
Veterinary science 1, 52

Besides completing a 20-hour major in either the plant sciences, the animal sciences, or agricultural economics, the student is required to take six hours in the groups in which he does not major. For example, a student majoring in animal science must complete in addition to 20 hours in his major field, 6 hours in plant science, 6 hours in agricultural economics, and 6 hours in agricultural engineering. He is also required to take the following courses:

	Hours
English 2	3
English 10	5
Math. 34	3
Pol. science 10, or History 17, or Rural Sociology 10	3 or 5

Students in the non-degree course must complete 90 hours of credit to obtain a certificate.

Agriculture

Faculties of Various Departments Make Up This Staff

Students wishing to major in General Agriculture should follow the suggested course of study given on page 77. Those interested in preparing themselves for teaching in Vocational Agriculture should be guided by the curriculum on page 78.

These courses are designed to give the student a broad general training in practical and scientific agriculture that will equip him for farming and

rural leadership and at the same time prepare him for professional work in agriculture.

110. **General Agriculture.** Lectures and laboratory work in the various fields of General Agriculture designed especially for students preparing to teach in the rural schools. Five credits. Winter, Lect., M. W. F. 2; Labs., T. Th. 2-5. *Walker and Staff*

Agricultural Economics and Marketing

Administered jointly by the School of Agriculture and the School of Commerce

W. P. THOMAS, *Professor;* G. T. BLANCH AND H. H. CUTLER, *Associate Professors;* D. A. BROADBENT, *Assistant Professor;* G. A. CARPENTER, *Extension Economist.*

Students majoring in the Department of Agricultural Economics and Marketing may be graduated from either the School of Agriculture or the School of Commerce. The choice of school in which to register should be determined by the field in which the student intends to do his minor work.

Those graduating from the School of Agriculture must satisfy requirements for graduation from that school in addition to agricultural courses prescribed by the major professor; those graduating from the School of Commerce must, in addition to satisfying the requirements for graduation from that school, include certain basic agricultural courses to be prescribed by the major professor.

In order to meet the requirements of students who plan to do graduate work or to enter into a field of employment where technical training is required, a special course has been provided for such students majoring in agricultural economics. Students satisfying requirements as prescribed for this course may graduate from either the School of Agriculture or Commerce. A schedule for this prescribed course may be obtained from the office of the Department of Agricultural Economics.

Agricultural Economics 53a and 53b or Economics 51 are prerequisite for all other courses in agricultural economics.

Rural Economy

53a and 53b. Principles of Economics. An introductory course in basic principles of economics with emphasis on those principles which are of particular importance in the field of agriculture and forestry. Three credits each quarter.

53a: Fall. Sec. 1, M. W. F. 10. Sec. 2, T. Th. 11, F. 12. Winter, Sec. 3, T. Th. 8, F. 12.

53b: Winter. Sec. 1, M. W. F. 10. Sec. 2, T. Th. 11, M. 12. Spring. Sec. 3, M. W. F. 10. *Cutler*

54. **Principles of Agricultural Economics.** An introduction to the field of agricultural economics with emphasis on the application of economic principles to the solution of agricultural problems. Three credits. (Not given in 1942-43.)

104. **Economic Development of Agriculture.** An economic analysis of geography and use of agricultural resources with special reference to the United States. Three credits. Spring, M. W. F. 8. *Blanch*

230, 231, 232. **Public Problems in Agriculture.** Seminar courses designed to familiarize the student with economic implications of problems confronting agriculture with special references for year 1942-43 to impacts of war and postwar problems in agriculture. Two credits. Fall, Winter and Spring, W. 3-5. *Staff*

Farm Management, Land Economics and Agricultural Finance

70. Farm Accounts. Farm accounts and their application to the organization and management of farms and to the filing of income tax statements. A fee of $1.00 will be charged for materials supplied. Three credits. Fall, Sec. 1, T. Th. 11-1; Spring, Sec. 2, T. Th. 11-1. *Blanch and Broadbent*

102. Principles of Farm Management. A study of the principles underlying the organization, management, and financial success of farms. Rates of production, labor efficiency, combination of enterprises and farm layout will be discussed. A fee of $1.00 will be charged for materials supplied. Three credits. Fall, Sec. 1, M. W. F. 9; Winter, Sec. 2, M. W. F. 8. *Blanch and Broadbent*

105. Agricultural Finance. A study of principles of agricultural credit. Emphasis is given to problems and methods of financing agriculture. Three credits. Fall, M. W. F. 11. *Cutler*

106. Land Economics and Utilization. A study of the economic principles underlying the utilization, valuation and tenure of agricultural land. Attention is given to prevailing land policies and to methods and techniques involved in dealing with problems of land use. A fee of $1.00 will be charged for materials supplied. Five credits. Spring, Daily 9. *Blanch*

202. Advanced Farm Management. Designed primarily to give students advanced training and experience in farm management. Prerequisite, Principles of Farm Management 102. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, T. Th. 3-5. *Broadbent*

206. Land Appraisal and Classification. A basic course in land appraisal and economic classification of land. Two credits. Fall, T. Th. 3-5. *Blanch*

Marketing and Prices

62. Principles of Marketing. A basic course designed for students in commerce, home economics and agriculture. Five credits. Winter, Daily 9. *Cutler*

110. Marketing Agricultural Products. A course in principles, problems and methods of marketing agricultural products. Three credits. Fall, M. 12, T. Th. 8. *Cutler*

113a. Farm Cooperatives. A course in principles underlying the organization, operation and management of cooperative sales, purchasing and service associations. Three credits. Winter, T. Th. 9, M. 12. *Thomas*

113b. Analysis of Farm Cooperatives. For students who desire detailed work in organization and management of cooperatives. Prerequisite, 113a, Farm Cooperatives. A fee of $1.00 will be charged for materials supplied. Two credits. Spring, T. 2, F. 3-5. *Thomas*

114. Marketing Fruits and Vegetables. The production and marketing factors as they relate to the marketing of fruits and vegetables with special reference to Utah conditions. Three credits. (Not given in 1942-43.)

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 conditions. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, T. Th. 10, F. 12. *Broadbent*

120. Agricultural Prices. The relationship between agricultural and non-agricultural prices and income, together with the state and national agricultural outlook reports, will be given consideration. Three credits. Winter, M. W. F. 11. *Thomas*

121. Price Analysis. A study of statistical and other methods used in analyzing prices and other economic data. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, M. W. F. 11. *Broadbent*

Special Graduate Courses

210. Research Methods in Agricultural Economics. A fee of $1.00 will be charged for materials supplied. Three credits. Winter, T. Th. 3-5. *Broadbent*

214. Research in Agricultural Economics. Thesis. Any quarter. Time and credit arranged. *Staff*

215. Special Problems in Agricultural Economics. Any quarter. Time and credit arranged. *Staff*

RECOMMENDED COURSES FOR STUDENTS IN SCHOOL OF AGRICULTURE

Freshman Year

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Ag. Economics 53a	3	Ag. Economics 53b	3	Speech 1	5
Botany 21	3	Botany 22	3	Horticulture 1	4
Mathematics 34	3	Mathematics 35	5	Mathematics 46	5
Vegetable Crops 1	4	Dairy 1	3	Poultry 1	3
Animal Husbandry 1	3	Agronomy 1	3		
	16		17		17

Sophomore Year

Chemistry 10	5	Chemistry 11	5	Chemistry 12	5
Landscape Arch. 3	3	English 40	5	English 10	5
Ag. Economics 70	3	Physiology 4	5	Agronomy 6	5
Animal Husbandry 10	3	Typing 86	1	Typing 87	1
Ag. Engineering 15	3			Poultry 2	1
	17		16		17

Junior Year

Mathematics 110	3	Ag. Economics 120	3	Ag. Economics 121	3
Ag. Economics 102	3	Economics 135	3	Ag. Economics 106	5
Ag. Economics 110	3	Animal Hus. 100	5	Ag. Economics 116	3
Bacteriology 1	4	Sociology 10	3	Ag. Engineering 10	4
Bacteriology 2	1	Business Admin. 100	3	Ag. Economics 114	3
Agronomy 118	2				
	16		17		18

Senior Year

Ag. Economics 230	2	Ag. Economics 231	2	Ag. Economics 232	2
Ag. Economics 206	2	Ag. Economics 210	3	Ag. Economics 202	3
Economics 106	3	Economics 107a	3	Economics 107b	3
Ag. Economics 105	3	Ag. Economics 113a	3	Ag. Economics 113b	2
Economics 165	3	English 110	4	English 5	3
Agronomy 102	2	Elective	2	Ag. Economics 104	3
Elective	2				
	17		17		16

Agronomy and Soils

R. J. EVANS, D. S. JENNINGS, D. W. PITTMAN,* *Professors;* A. F. BRACKEN D. W. THORNE, D. C. TINGEY, *Associate Professors;* H. B. PETERSON, *Instructor;* LEMOYNE WILSON, *Research Assistant Professor;* A. F. BRACKEN, *Extension Agronomist;* O. F. BARTHOLOMEW, J. W. CARLSON, WESLEY KELLER D. F. MCALISTER, R. W. WOODWARD, *Collaborators in Research, U. S. D. A.*

1. General Farm Crops. A general introductory course in crop production. Three credits. Fall, M. W. F. 2-4. Winter, M. W. F. 2-4. *Staff*

6. General Soils. An introductory course in soils with incidental study of soil fertility and management problems. A beginning course for students in agriculture and forestry, and for other students except majors in Agronomy and Soils who will take Agronomy 106 instead. Prerequisite, Inorganic Chemistry. Five credits. Fall, M. T. W. Th. 11; Lab., M. 2-5, or F. 2-5. Spring, M. T. W. Th. 9; Lab., M. 2-5 or T. 2-5. *Thorne and Peterson*

7 General Soils Laboratory. This course offers separate credit for the laboratory of Agronomy 6 for students who have had a general soils course without a laboratory. One credit. Fall, M. or F. 2-5. Spring, M. or T. 2-5.

Soil Microbiology. (See Bacteriology 100.)

101. Cereal Crops. The classification, history and cultural methods involved in production of cereal crops. Three credits. Fall, T. Th. 10; Lab., Th. 2-5. *Tingey*

102. Root and Miscellaneous Crops. Sugar beets, potatoes, cotton, tobacco, mangels, other root crops, field peas and beans are studied in detail as to cultural methods, market types, and commercial possibilities. Two credits. Winter, T. Th. 8. *Tingey*

103. Forage Crops. Alfalfa, clovers, grasses and other farm forages; classification and methods of production, harvesting and storage; meadow and pasture management, are discussed. Attention will be given to the place of these crops in rotation, soil conservation, and erosion control. An assessment will be made for field trips. Four credits. Spring, M. W. F. 8; Lab., M. or T. 2-5. *Evans*

104. Commercial Grading. Application of the Federal Standards in the grading of field crops. Two credits. Fall, Lab., W. 2-5, and one Lab. arranged. *Tingey*

105. Seed Analysis and Testing. Impurities of farm and garden seeds; methods of analysis and testing; the inspection and marketing of seeds. Not given except on application of three or more students. Any quarter. Two or more credits. Two or more laboratory periods a week. Time arranged. (Not offered 1942-43.) *Tingey*

106. Introductory Soil Science. The nature and properties of soils. Emphasis will be given to the physical, chemical and biological characteristics of the soil, profile development, maintenance of fertility, and the management under arid conditions. Designed especially for students majoring in Agronomy and Soils. Prerequisites, Chem. 3, 4, and 5 or equivalent; Bact. 1 and 2 or equivalent; Geol. 3; Physics. An assessment may be made for field trips. Five credits. Credit will not be allowed for both Agronomy 6 and 106. (Not offered 1942-43.) *Peterson*

108. Soil Management. Consideration is given to cultivation, crop rotation, maintenance of organic matter, water relations, alkali, and other problems encountered in the management of arid soils. Prerequisite, Agron. 6 or 106. Three credits. Fall, M. W. F. 9. *Thorne*

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*On leave.

109. Plant Breeding. The principles and practices of plant breeding, technique and improvement by selection and hybridization. Prerequisite, Zoo. 112. Four credits. Spring, M. W. F. 11; Lab., W. 2-5. *Tingey*

110. Soil Fertility. Factors affecting the crop producing power of soils. The principles of fertilizer practice and soil testing. Four credits. Prerequisites, Agronomy 6 or 106. Winter, M. W. F. 10; Lab., M. 2-5. *Thorne*

111, 112. Agronomy Seminar. Review and discussion of current agronomic problems and practices. Required of all seniors in department. One credit each quarter. Fall, T. 11. Winter, T. 1. *Staff*

115. Biometry. Application of statistical principles to the design of biological experiments and the analysis of the data. Prerequisites, Math. 35, 110 or their equivalent. Three credits. Winter, M. W. F. 9. *Tingey*

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; and analysis of the possibilities in typical climatic areas, and on important soil types. Three credits. Spring, M. W. F. 9. (Not given 1942-43.) *Bracken*

117. Geography of Agriculture. A brief review of the fundamental principles of climatic controls. The principal agricultural regions of the world will be studied from the standpoint of their topography, climate, soils, crops, livestock, population and industries as related to agriculture. Three credits. Fall. (Not given 1942-43.) *Bracken*

118. Weeds. Identification of weed seeds and plants, the weed problems in agriculture and methods of control. Two credits. Fall, Th. 9; Lab., Th. 2-5. An assessment will be made for field trips. *Evans*

121. Soil Technology. A study of soil profile characteristics, soil structure, consistency and moisture relationships and the mineral and organic constituents of soils as related to the production of range and forest plants. Prerequisites, Chem. 10, 11 and 12, and Agronomy 6 or their equivalents. Four credits. Winter, lecture M. W. F. 8; Lab., T. 2-5. *Peterson*

122. Soil Survey and Land Classification. The influence of environmental factors on soil profile development, soil and land classification, the technique or mapping, and the preparation and interpretation of soil type, alkali and the land classification maps. One field trip will be made to counties where the soil survey is completed. Prerequisite, Agron. 106 or previous arrangement with the Instructor. Five credits. Spring, M. W. F. 11; Lab., W. 2-5, and one Lab. arranged. An assessment will be made for field trips. *Jennings*

124. Advanced Grading and Identification. Prerequisites, Agron. 104 and 118. Two credits. Spring. Time arranged. (Not given 1942-43.) *Tingey*

125. Soil Conservation. Special problems of soil management and land policy in relation to soil conservation. Field practice in making soil conservation surveys and in planning farms on a soil conservation basis. An assessment will be made for field trips. Prerequisites, 8 hours in soils and 6 credit hours in farm crops. Three credits. Spring, T. Th. 11; Lab., M. or T. 2-5. *Thorne*

126. Advanced Judging. Preparation of teams for intercollegiate judging. Fall quarter. One credit. Time arranged. (Not given in 1942-43.) *Tingey*

201. Advanced Farm Crops. This course will deal with the technical phases of recent advances in crop production. Three credits. Fall. Alternated with Agron. 209. Given only for three or more graduate students. *Evans*

207. Advanced Soils. This course is designed to develop the science of pedology and is intended primarily for students expecting to specialize in soils. The physical and chemical nature of the mineral and organic particles, their relation to the phenomena of water-holding power, supply of plant nutrients, soil alkali, and soil structure. Special emphasis will be given to soil colloids and base exchange reactions. Three credits. Winter. Alternates with Agron. 219. Given only for three or more graduate students. *Jennings*

209. Advanced Plant Breeding. The science and practice of plant breeding. Original papers and lectures. Three credits. Spring, two lectures, one laboratory, time arranged. This course will alternate with Agron. 201. *Tingey*

212. Soils Seminar. Review of scientific literature relating to soil management, soil fertility, and soil technology. Required of all graduate majors. Fall, Winter, Spring. One credit each quarter. Time arranged. *Soils Staff*

213. Crops Seminar. Current scientific topics in farm crops. Required of all graduate majors. Fall, Winter, Spring. One credit each quarter. Time arranged. *Crops Staff*

215. Experimental Methods in Agronomic Research. The design of experiments, technique and methods of procedure, analysis and interpretation of results. Open to approved senior college students. Three credits. Spring, time arranged. (Not given in 1942-43.) *Staff*

218. Special Problems. Special problems in crop production, crop breeding, soil fertility or other phases of agronomic work will be investigated. Students will make a review of the literature on the problem and conduct experiments in the laboratory or on field plots. Any quarter. Time and credit arranged. *Staff*

Soil Physics. (See Physics 114.) *Gardner*

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

A SUGGESTED COURSE IN GENERAL AGRONOMY

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Math. 34	3	Ag. Econ. 53b	3	Bacteriology 1 & 2	5
Ag. Econ. 53a	3	Math. 35	5	Math. 46	5
Botany 21	3	Botany 22	3	Poultry 1	3
Agron. 1	3	Veg. Crops 1	3	Hort. 1	3
Landscape 3	3	An. Hus. 1	3	Electives	1
	17		17		17

Sophomore

Physics 3 or 6	5	Phys. 7 or Eng. 10	5	Chem. 5	5
Geol. 3	5	Chem. 4	5	Agron. 6	5
Chem. 3	5	Dairy 1	3	Chem. 12 or Eng. 10	5
Electives	2	Electives	4	Electives	2
	17		17		17

Junior

Agron. 118	2	An. Hus. 10	3	*Zoology 112	5
Agron. 108	3	Agron. 102	3	Agron. 103	3
Agron. 101	3	Electives	11	English 110	4
Electives	9			Electives	5
	17		17		17

Senior

Ag. Eng. 10	4	Agron. 112	1	Agron. 109	4
Botany 130	5	Zoology 14	4	Agron. 125	3
Agron. 111	1	Agron. 110	4	Electives	10
Electives	7	Agron. 115	3		
	17	Electives	5		17
			17		

NOTE: See School of Agriculture requirements on page 77.

*May be exempted by special permission of Agronomy Department.

By special permission, Chem. 10 and 11 may be substituted for Chem. 3, 4, and 5. Physics 6 and 7 may be taken instead of Physics 3. Chem. 121 and 122 may be taken instead of Chem. 12.

Recommended Electives:

Range Management 160
An. Hus. 10, 100
Dairy 110
Botany 23
Ag. Econ. 102, 110
Botany 30, 120
Agronomy 104

TECHNICAL COURSE IN SOILS

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Math. 34	3	Math. 35	5	Math. 35	5
Agron. 1	3	Bot. 22	3	Geology 3	5
*Ag. Econ. 53a	3	An. Hus. 1	3	Poultry 1	3
Bot. 21	3	Ag. Econ.	3	Lit. or Arts	3
Land. Arch.	3	Electives	3	Electives	1
Electives	2		17		17
	17				

Sophomore

Chem. 3	5	Chem. 4	5	Chem. 5	5
Math. 97	5	Math. 98	5	Agronomy 6	5
Soc. Sc.	5	Bact. 1 & 2	5	English 10	5
Electives	2	Electives	2	Electives	2
	17		17		17

Junior

Phys. 20	5	Phys. 21	5	Phys. 22	5
Ag. Eng. 10	4	Eng. 110	4	Botany 120	5
Agron. 102	2	Chem. 102	3	Chem. 103	3
Electives	6	Electives	5	Electives	4
	17		17		17

Senior

Agron. 111	1	Agron. 115	3	Agron. 103	4
Agron. 108	3	Agron. 110	4	Agron. 122	5
Agron. 101	3	Chem. 122	5	Agron. 125	3
Chem. 121	5	Agron. 112	1	Electives	5
Electives	5	Electives	4		17
	17		17		

NOTE: See School of Agriculture requirements, page 77.

*Econ. 51 may be substituted for Agricultural Economics, 53a and b, provided 3 hours of work are taken in the field of Agricultural Economics.

Modern language may be used to meet the above language group requirement.

Recommended Electives:

	Credit		Credit
Chem. 104, 105, 106	9	An. Hus. 10	3
Agricultural Economics 102	3	Dairy 1 or 109	3
Agron. 100	3	Veg. Crops 1 or 105	3
Geol. 115	5	Hort. 1	3
Botany 23	3		

Animal Husbandry

FRED F. MCKENZIE, A. C. ESPLIN, H. H. SMITH, *Professors*; R. A. RASMUSSEN, *Associate Professor;* M. A. MADSEN, *Instructor;* A. C. ESPLIN AND H. H. SMITH, *Extension Animal Husbandmen.*

Students majoring in Animal Husbandry will be expected to complete courses No. 1, 5, 10 and 15 during the freshman and sophomore years, and during the junior and senior years at least 18 additional hours, including courses No. 100, 130 (5 credits) and 150. Courses numbered 200 and above are designed for graduate students only. Students majoring in Animal Husbandry will be expected to take Zoology 2, Bacteriology 1 and 2, Veterinary Science 10 and 52, and Range Management 160. Further, the student should check Junior and Senior College requirements listed on pages 53 to 55 and those requirements pertaining to courses in Specialized Agriculture and Technical Courses in Agriculture on pages 78 and 80.

For those students who plan to become livestock operators, county agents, vocational agriculture teachers or to do work in similar fields, the following minors are suggested: Agricultural Economics, Agronomy and Soils, Dairy Manufacturing, Entomology, Poultry Husbandry, and Range Management.

Students who plan to do graduate work may be admitted to the technical course in Animal Husbandry by permission of the Head of the Department. For such students a minor in Chemistry, Physiology or Zoology is suggested.

The Department is equipped to give graduate work in Animal Breeding, Animal Nutrition, Animal Production and Wool Technology. Students desiring to take graduate work must confer with the Head of the Department before registering.

1. Introduction to Animal Husbandry. A course planned to give the student a broad understanding of livestock production in relation to other phases of agriculture in the United States and Utah, the influence of geographical locations and conditions upon livestock production, the various types of farm animals and the functions performed or products produced, and an introduction to the important factors in the successful production of livestock. Some practice in judging, handling and fitting livestock will be afforded. Three credits. Fall, M. W. F. 2-4. Winter, M. W. F. 2-4. *Staff*

5. Livestock Judging and Selection. A study of animal form and its relation to the function of the animal. Emphasis is placed on the evaluation of the live animal in terms of its probable value for the production of meat, wool, or work. Emphasis will be placed on judging for both commercial and showing purposes. Some practice in handling and fitting livestock will be afforded. Three credits. Spring, M. W. F. 2-5. *Madsen*

10. Feeds and Feeding. Feedstuffs, the composition and balance of rations, the feeding of cattle, horses, sheep and swine, with special consideration given to conditions in the intermountain area. It is suggested that the student take Veterinary Science 10 before registering for feeds and feeding. Three credits. Fall, M. W. F. 10. Spring, M. W. F. 8. *Staff*

15. Animal Breeding. The anatomy and physiology of reproduction with emphasis upon fertility and factors that have to do with the breeding efficiency of livestock. Includes the principles and practices of artificial insemination. Three credits. Winter, M. W. F. 10. *McKenzie*

100. Livestock Production. Systems of beef cattle, sheep, horse and swine production, including the breeding, feeding and management of commercial and purebred livestock with special reference to range conditions. It is suggested that the student taking this course have had A. H. 1 and A. H. 10, but these are not required, except for Animal Husbandry majors. Not open to underclassmen. Five credits. Winter, Daily 9. *Esplin*

130. Wool Technology. Study of the various methods of marketing and manufacturing of wool, and of the various laboratory techniques used in the study of wool. Methods of grading, scouring and measuring length, diameter, crimp, density, tensile strength and other characteristics are included. Three to five credits. Winter, lectures M. W. 1, third lecture arranged. Laboratory Saturday 8-12. *Staff*

150. Animal Nutrition. This course will consist of a combination of lectures and special assignments. Attention will be given to various fundamental phases of animal nutrition, including protein, carbohydrate, fat and mineral metabolism, and vitamins. Special attention will be given to Utah conditions. Prerequisites, Veterinary Science 10, Zoology 2, A. H. 10, Chemistry 12 or Biochemistry 111, or equivalents. Five credits. Fall, Daily 8. *Rasmussen*

155, 255. Advanced Animal Breeding. Genetics as applied to livestock, including selection, variation and breeding plans. Prerequisite, Zoology 112 (Principles of Genetics) or equivalent. Three credits. Winter, T. Th. S. 8. *Madsen*

165. Advanced Livestock Judging. This course is a continuation of the training begun in A. H. 5, and is designed to give students intensive training in livestock judging and selection. The Livestock Judging Team will be selected from among the students taking this course. Prerequisite, A. H. 5. Three credits. Fall, M. W. F. 2-5. *Madsen*

170. Meats. The slaughtering of domestic animals and the cutting, curing and freezing of meats; problems involved in the selection and utilization of cuts, grading and handling of meat. Inspection trip required. Expenses about $7.00. Prerequisite, A. H. 100, Livestock Production. Three credits. Winter. One lecture, time arranged. Laboratory, T. Th. 7-9 p. m. *Staff*

190, 290. Livestock Management I. Advanced work in beef production and animal nutrition. Lectures, special assignments and discussions. Senior standing required. Prerequisites, A. H. 100 and A. H. 150. Three credits. Winter, M. W. F. 8. *McKenzie and Rasmussen*

191, 291. Livestock Management II. Advanced work in sheep and wool problems and animal breeding. Lectures, special assignments and discussions. Senior standing required. Prerequisites, A. H. 15 and A. H. 100. Spring, T. Th. S. 8. *McKenzie*

195, 200. Problems in Animal Husbandry. Leading scientific journals and experiment station publications in a chosen field of animal industry are studied to acquaint the student with methods, current problems and the results of scientific research. A minor research problem may be included. 195 for undergraduates and 200 for graduates. Credit and time to be arranged. One to six credits. Fall, Winter, Spring. *Staff*

230. Research. Students will be expected to outline a research problem in some phase of animal husbandry, make a critical review of pertinent literature, collect and analyze the necessary data and prepare a report of the work done. This work may constitute the thesis material for the M. S. degree, or may be carried out for graduate credit apart from the thesis. One to fifteen credits. Fall, Winter, Spring. Time arranged. *McKenzie and Staff*

260. Seminar. Round table discussion of topics of current interest. Graduate students and staff will participate. Assignments will include reviews of literature on various topics in animal breeding, nutrition and production, and wool technology, reports on current literature, and presentation of results of experiments being conducted in the Department. One credit. (May be repeated.) Winter and Spring. Time arranged. *McKenzie and Rasmussen*

Bacteriology and Biochemistry

Administered jointly by the School of Agriculture and the School of Arts and Sciences

J. E. GREAVES, *Professor;* K. R. STEVENS, *Associate Professor;* L. W. JONES, *Instructor.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students majoring in the Department of Bacteriology and Biochemistry must complete Physics 6, 7, or 21, 22; Mathematics 46; Chemistry 12 or 122; Botany 21, 22; and Bacteriology 1, 2, 20, 107, 109, 110, 111, 112.

1. Elementary Bacteriology. Deals with the biology and significance of bacteria and other microorganisms; their morphology and physiology; and introduces the fundamental principles governing the bacteriology of water, sewage, milk, food sanitation, communicable diseases, etc. Where possible this course should be accompanied by Bacteriology 2. Four credits. Fall or Winter, M. T. Th. F. 10, 11. Spring, M. T. Th. F. 9, 11. *Staff*

2. Elementary Bacteriology Laboratory. Experiments on the more important phases of Elementary Bacteriology. One credit. Fall, Winter or Spring, M. T. W. Th. or F. 2-5. *Staff*

10. Engineering Bacteriology. Consideration is given to those fundamentals and principles of bacteriology which are required in special phases of engineering. Two lectures and one 3-hour laboratory period each week. Three credits. Fall, T. Th. 10; Lab., Th. 2-5. *Stevens*

20. Bacteriological Technique. Training in advanced experiments. Open to qualified students. Two credits. Fall, Winter or Spring, M. W. 2-5. *Staff*

100. Soil Microbiology. Microorganisms are considered in relation to soil fertility. Graduate students who have taken Bacteriology 111 may arrange with the professor in charge for graduate credit, and register for 200. Where possible this course should be accompanied by Bacteriology 101. Prerequisite: Bacteriology 1, 2; Agronomy 6 or 106; Organic Chemistry. Three credits. Winter, M. W. F. 11. Given in alternate years. *Greaves*

101. Soil Microbiology Laboratory. Experiments to demonstrate the fundamentals discussed in the lecture course. Two credits. Winter, T. Th. 2-5. *Greaves*

102. Industrial Microbiology. The relation of microorganisms to industrial fermentations. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two lectures; 1 three-hour laboratory period. Three credits. T. Th. 9, F. 2-5. (Not given in 1942-43.) *Stevens*

104. Dairy Bacteriology. The microorganisms of milk and dairy products and their relation to the production, spoilage, and sanitation of such products. Prerequisite: Bacteriology 1, 2. Three credits. Fall, M. W. F. 8. *Jones*

105. Dairy Bacteriology Laboratory. Experiments to demonstrate the fundamentals discussed in the lecture course. Two three-hour laboratory periods. Two credits. Fall, T. Th. 2-5. *Jones*

106. Pathogenic Bacteriology. Deals with the properties and characteristics of pathogenic microorganisms and their relation to the cause, prevention, and control of infectious diseases. Prerequisites: Bacteriology 1, 2. Two lectures; two three-hour laboratory periods. Four credits. Spring, T. Th. 9, M. W. 2-5. *Stevens*

107. Systematic and Determinative Bacteriology. Largely individual work in isolating, identifying, and classifying bacteria. Prerequisite: Bacteriology 1, 2. Two credits. Winter, M. W. 2-5. *Stevens*

108. Chemical Bacteriology. Composition of and transformations due to bacteria. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two credits. Fall, M. W. 1. (Not given in 1942-43.) *Greaves*

109, 110. Advanced Bacteriology.** Special phases of bacteriology. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Bacteriology 109 is not a prerequisite for 110. Two credits each quarter. Winter and Spring, M. W. 1. *Jones and Greaves*

111. Biochemistry. Transformations going on in the plant and animal. Prerequisite: Organic Chemistry. Five credits. Spring, Daily 10. *Greaves*

112. Biochemistry Laboratory. Experiments to accompany Bacteriology 111. Two credits. Spring, T. Th. 2-5. *Greaves*

113, 114, 115. Advanced Biochemistry. A study of the chemical transformations going on in the animal body. The class will be conducted much as a seminar. Graduate students may arrange with the professor in charge for graduate credit, and register for 213, 214, 215. Two credits each quarter. Fall, Winter, and Spring, T. Th. 1. *Greaves*

116. Sanitary Analysis. Lectures and experiments covering the methods used by the sanitary inspector in examining water, milk, and other foods. Prerequisite: Bacteriology 1, 2; Chemistry 103. One lecture: 2 three-hour laboratory periods. Three credits. Spring, W. 1, T. Th. 2-5. *Jones*

120. Food Microbiology. A study of the microorganisms involved in food production, distribution, and preservation. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two lectures; 1 three-hour laboratory period. Three credits. Fall, M. W. 9, F. 2-5. *Stevens*

125. Clinical Laboratory Methods. Open to properly qualified senior or graduate students. Two credits. Spring, W. F. 2-5. *Jones*

207. Research. The laboratory and library facilities are especially equipped for advanced students in bacteriological and biochemical investigations in agriculture, household sciences, the industries, sanitary science, and veterinary science. One to five credits. Any quarter. Time arranged. *Staff*

217, 218, 219. Seminar. May be taken by properly prepared undergraduate students by registering for 117, 118, 119. Two credits each quarter. Any quarter. Time arranged. *Staff*

**Not given 1942-43.

TECHNICAL COURSE IN BACTERIOLOGY

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Math. 34	3	Math. 35	5	Math. 46	5
Bot. 21	3	Bot. 22	3	Bact. 20	2
Ag. Econ. 53a	3	Ag. Econ. 53b	3	Soc. 10	3
Bact. 1, 2	5	Lang.-Arts	3	Lang.-Arts	5
M. S. or P. E.	1	M. S. or P. E.	1	M. S. or P. E.	1
Psy. A	½	Psy. B	½	Psy. C	½
	15½		15½		16½
		Sophomore			
Zoology 3	5	Zoology 4	5	English 10	5
Chem. 3	5	Chem. 4	5	Chem. 5	5
Physics 6	5	An. Hus. 10	3	Physics 7	5
M. S. or P. E.	1	M. S. or P. E.	1	M. S. or P. E.	1
Electives	1	Electives	3	Electives	1
	17		17		17

Junior

Chem. 121	5	Chem. 122	5	Biochem. 111, 112	7
Bact. 104, 105	5	Chem. 102	3	Chem. 103	3
Vet. Sci. 10	3	Electives	9	Electives	7
Electives	4				
	17		17		17

Senior

Land. Hort. 6	3	Bact. 100, 101	5	Bact. 106	4
Agron. 106	5	Bact. 109	2	Bact. 110	2
Eng. 110	4	Electives	10	Electives	11
Electives	5				
	17		17		17

Botany and Plant Pathology

Administered jointly by the School of Agriculture and the School of Arts and Sciences

B. L. RICHARDS, *Professor;* F. B. WANN, BASSETT MAGUIRE, *Associate Professors;* R. S. SNELL*, *Assistant Professor;* R. M. CHRISTIANSEN, *Research Assistant;* H. L. BLOOD, MICHAEL SHAPOVALOV, *Collaborators in Research, U. S. D. A.*

In addition to course work, the Department of Botany offers special opportunity for research in plant pathology, plant physiology, plant anatomy and taxonomy. The research and graduate possibilities in plant pathology are greatly augmented by the cooperating division of the United States Department of Agriculture under the direction of H. L. Blood and M. Shapovalov.

See pages 53 and 54 for courses that may satisfy group requirements.

REQUIREMENTS FOR A MAJOR IN BOTANY OR PLANT PATHOLOGY

Bot. 21, 22, 23 General Botany
Bot. 30 Taxonomy
Bot. 116 Micro-Technique
Bot. 117 Plant Anatomy
Bot. 120 Plant Physiology
Bot. 130 Plant Pathology
Bot. 150 Mycology
Bot. 240 Seminar

Botany 21, 22, 23, 30, 120 and 130 or equivalent required for teaching major.

Recommended additional courses for the following major fields:

Plant Pathology
Bot. 121 Water Relations
Bot. 131 Field Crop Diseases
Bot. 135 Fruit Crop Diseases
Bot. 140 Forest Pathology
Bot. 151 Mycology

Taxonomy
Bot. 104 Tax. Poisonous Pls.
Bot. 108 Agrostology

Plant Physiology
Bot. 121 Water Relations
Bot. 224 Advanced Physiology

1. Principles of Biology. A fundamental course in the basic life principles as illustrated in both plant and animal forms. Special attention will be given to the nature and structure of protoplasm, differentiation in plant and animal cells, adaptation, development and reproduction, heredity and evolution, types and phylogenetic relationships as exhibited in the big groups of plants and animals. For junior college students except those who may elect Botany 21, 22, 23, or Zoology 3 and 4. Four lectures and one laboratory. Five credits. Fall, Section 1, Daily 9; Section 2, M. T. W. F. 10; Section 3, M. T. W. F. 11; Section 4, M. T. W. Th. 2; Lab., T. or Th. 8-10 or 3-5.

Staff in Botany and Zoology

*On leave.

21, 22, 23. General Botany. A general course in the fundamental principles of plant biology dealing with the structure, nutrition, growth, reproduction, and relationships of plants. Continuous through three quarters. Consideration will be given successively to: anatomy and functions of the flowering plants; comparative study of representatives of the plant kingdom from an evolutionary point of view; inheritance; and recognition of important vascular plant families. Three credits each quarter. Fall, Winter and Spring. Lect. T. Th. 8, 9, 10; Lab., M. W. or F. 8-11, or any day 2-5. *Snell*

Students majoring in General Agriculture can satisfy their botany requirements by completing Botany 21 and 22.

30. Taxonomy of Vascular Plants. A fundamental course dealing with the kinds, relationships, and classifications of the vascular plants chiefly of this region. Prerequisites, Botany 21, 22, 23. Five credits. Spring, T. Th. 9; Lab., M. W. 2-5, T. Th. 2-5. *Maguire*

104. Taxonomy of Poisonous Plants. A course which deals with the recognition, distribution, and ecology of the poisonous plants, native and introduced, which occur in the intermountain West with particular emphasis upon those found in the state of Utah. Prerequisite, Botany 30. Two credits. Winter, M. 10; Lab., M. 2-5. *Maguire*

108. Agrostology. A taxonomic study of native and imported grasses of the western ranges. Special attention given to species playing an important part in grazing and soil binding. Prerequisites, Botany 21, 22, 23, 30. Four credits. Winter, Lect., T. Th. 11; Lab., T. Th. 2-5. *Maguire*

110. Limnology. A course treating the physical, chemical and biological factors affecting the occurence and productivity of the fresh (and brackish water) water biota. Special attention is given to field methods. Botany 30, Botany 120, and Zoology 103 (or equivalent), are desirable precursors to Botany 110. Four credits. Fall, T. Th. 9; Lab., T. Th. 2-5. *Maguire*

116. Micro-Technique. Methods of killing and preserving plants and the preparation of permanent sections of plant material. Designed especially for teachers of Botany and research students in all the plant sciences. Four credits. Spring, Lect., T. Th. 1; Lab., T. Th. 2-5. (Not given 1942-43.) *Snell*

117. Plant Anatomy. A detailed study of structure of vascular plants. Structure is consistently correlated with function. Interpretation of laboratory materials is emphasized. Prerequisites, Botany 21, 22, 23. Four credits. Spring, Lect., T. Th. 1; Lab., T. Th. 2-5. To alternate with Botany 116. *Snell*

120. Elementary Plant Physiology. A course dealing with fundamental principles of absorption, mineral nutrition, food manufacture, metabolism, translocation, and growth. Prerequisites, Botany 21, 22, 23, and Chemistry 12 or 121. Five credits. Winter or Spring, M. W. F. 9; Lab., Winter, T. Th. 8-11; Spring, T. Th. 8-11 or 2-5. *Wann*

121. Water Relations of Native Plants. Consideration of rooting habits, sap concentration, transpiration and water requirements of native plants in relation to distribution and adaption to environment. Prerequisite, Botany 120. Three credits. Winter, M. W. F. 11. *Wann*

***130. Principles of Plant Pathology.** Fundamental principles underlying diseases in plants. The types of diseases and methods of study are such as will give the student a comprehensive view of the subject of Plant Pathology. Prerequisites, Botany 21, 22, 23. Five credits. Fall, Lect., M. W. F. 11; Lab., M. F. 2-5. *Richards*

131. Field and Forage Crop Diseases. Diseases of field and forage crops with special emphasis on the factors underlying their cause, development, and control. Prerequisite, Botany 130. Four credits. Winter. Alternates with Botany 135. Lect., M. W. 11; Lab., T. Th. 2-5. (Not given 1942-43.) *Richards*

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*Open to short course students.

135. Vegetable and Fruit Crop Diseases. Diseases of vegetable and fruit crops. Prerequisite, Botany 130. To alternate with Botany 131. Four credits. Winter. Lect., W. F. 11; Lab., M. F. 2-5. *Richards*

140. Forest Pathology. Study of the nature, cause and control of diseases affecting forest trees. Factors inducing loss in forest products are also emphasized. Prerequisites, Botany 21, 22, and 23. Four credits. Winter, Lect., W. F. 10; Lab., T. Th. 9-12. *Richards*

150. Mycology. Morphology and taxonomy of the Phycomycetes and Ascomycetes with emphasis on economic forms. Prerequisites, Botany 21, 22, 23. Four credits. Fall. Alternates with Botany 151. Arranged. *Richards*

151. Mycology. Continuation of Botany 150, dealing with the morphology and taxonomy of the Basidiomycetes and Fungi imperfecti. Prerequisites, Botany 21, 22, 23. Four credits. Fall. Lect. arranged. Lab., T. Th. 2-5. (Not given 1942-43.) *Richards*

160, 161, 162. Laboratory Methods. Open to qualified senior or graduate students majoring in Botany. One credit each quarter. Fall, Winter, Spring. Time arranged. Graduate credit may be obtained by registering for 260, 261, 262. *Staff*

221. Pathological Technique. Special methods as applied to Plant Pathology, Physiology, and related subjects. Students may register for this course only by special permission. Four credits. Time arranged. Winter. *Richards and Wann*

224. Advanced Plant Physiology. Chemical reaction and transformation underlying the vital processes in plants. Prerequisite, Botany 120. Three credits. Spring, M. W. F. 11. *Wann*

234, 235, 236. Special Problems. Open to qualified students majoring in Anatomy, Taxonomy, Plant Physiology, or Plant Pathology. Fall, Winter, Spring. Two to four credits. Time arranged. *Staff*

240, 241, 242. Seminar. Any quarter. Two credits. Time arranged. *Staff*

250. Research. Open to all qualified college students in Botany and Plant Pathology. Any quarter. Time and credit arranged. *Staff*

Plant Ecology. (See Range Management 126.)

Dairy Husbandry and Manufacturing

G. B. CAINE, *Professor;* A. J. MORRIS, *Associate Professor;* WENDELL FUHRIMAN, *Instructor;* G. Q. BATEMAN, *Research Assistant Professor;* J. E. PACKER, *Research Assistant;* LYMAN RICH, *Extension Dairyman.*

Students majoring in Dairy Husbandry must complete the following major courses for graduation: Dairy 1, 5, and 6; An. Hus. 10, 150, 155, as well as all other courses listed in Dairy Production. Chem. 107 and Bact. 104 will also be required.

A suggested course is set up for students majoring in Dairy Manufacturing. Students should study this course rather carefully and adhere to it as closely as possible. It is expected that students spend at least six months in a commercial 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 procuring summer work through the department. Very good cooperation exists between the department and the commercial dairies, and frequent trips are made to them during this course of study.

There is a good demand in the technical field of dairying for students who have had advanced training.

An opportunity is offered to do graduate work with an application in the field of chemistry, biochemistry, genetics, bacteriology or economics.

1. General Dairy Husbandry. Designed for students who desire a short general course in Dairy Husbandry. Taught for the students majoring in Dairy Husbandry as well as any student in the school of Agriculture. The following topics will be considered: History and present status of the dairy industry; starting dairy herds; breeds of dairy cattle; cow testing associations; club work; study of herd records; calf feeding; general principles of feeding management and housing of dairy cattle. Lab., Judging dairy cattle. Three credits. Fall, Winter, or Spring, T. Th. 9 Lab., Th. 2-5. *Caine*

3. Principles of Dairy Industry. A general course introductory to all courses in Dairy Manufacturing and adapted to students taking general agricultural work. It includes the history and development of the dairy industry with definite study of the secretion of milk, its composition, properties and food value; separation and handling of milk; the use and operation of Babcock tests; and a brief study of butter, cheese, ice cream, and of dairy arithmetic. Three credits. Winter, T. Th. 10; Lab., W. 2-5. *Morris*

5. Judging Dairy Products. Methods and practice in judging and grading dairy products for market and show. Two credits. Spring, W. 1; Lab., W. 2-5. *Morris*

6. Market Milk. Modern, sanitary methods of producing, processing, and marketing milk, cream, and related products for city supply. Three credits. Fall, T. Th. 8; Lab., T. 2-5. *Morris*

7. Dairy Practice. A course for special or short course students only. Practice in plant manufacture will be emphasized. Any quarter. Time and credit arranged. *Morris*

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. Four credits. Fall, M. W. F. 9; Lab., M. 2-5. *Caine*

101. Manufacture of Ice Cream and Ices. Purchase of raw materials. Chemical and physical structure of an ice cream mix and its relation to the finished product. Standardizing, processing, and freezing of standard commercial ice creams, sherbets, and ices. Five credits. Spring, M. T. W. Th. 10; Lab., T. 2-5. *Morris*

102. Manufacture of Butter. Receiving and grading of milk and cream. Neutralization and pasteurization of cream. Manufacture, packing, and grading of butter under commercial conditions. Quality and composition control will be emphasized. Five credits. Winter, M. T. W. Th. 8; Lab., T. 2-5. *Morris*

103. Manufacture of Cheese. A study of the factors involved in the manufacture of cheese of the cheddar and other types. Classification, statistics, curing, marketing, and factory organization will also be studied. Five credits. Fall, M. W. F .10; Lab., F. 11-5. *Morris*

105, 106, 107. Management and Operation of Dairy Manufacturing Plants. Personnel problems, advertising, selling, managerial use of records, and other principles underlying successful management and operation are considered. All operations of the creamery are conducted by this class. Application for admittance must be made in writing. Two credits each quarter. W. 1; Lab., arranged. *Morris*

109. Dairy Production. A brief review of the dairy industry. The place of dairying in a permanent system of Agriculture. Origin of breeds, study of dairy type, brief review of breeds of dairy cattle. Factors to consider in selecting a breed. Selection of cows, systems of record keeping, selection, care, and management of the herd sire. Winter, three credits. M. W. F. 11. *Caine and Rich*

110. Dairy Production. A brief review of dairy cattle breeding; calf feeding and management, developing dairy heifers; factors influencing the growth and development of dairy cattle; the care and management of dairy herds. Special emphasis on feeding for milk production. A brief study of metabolism and the characteristics of feeds and feeding standards. A thorough study of housing dairy cattle. Prerequisite, Dairy 109. Five credits. Spring, M. T. W. F. 11; Lab., T. 2-5 *Caine, Bateman and Fuhriman*

111. Dairy Cattle Judging. A study of the types of the various breeds of dairy cattle. Visits to important herds. Valuation of dairy cattle. Two credits. Spring, T. Th. 2-5. *Caine and Fuhriman*

115. Seminar. Discussion and reports of current literature. Any quarter. Time and credit arranged. *Staff*

150. Special Problems in Dairy Production. Any quarter. Time and credit arranged. *Caine*

151, 152, 153. Dairy Technology. Testing and analysis of milk and the products made from it. Introductory dairy research will be emphasized. Two credits each quarter. Fall and Winter, M. 1; Lab., M. 2-5. Spring, Th. 1; Lab., Th. 2-5. *Morris*

154. Special Problems in Dairy Manufacturing. Any quarter. Time and credit arranged. *Morris*

216. Research in Dairy Production. Any quarter. Time and credit arranged. *Caine*

217. Research in Dairy Manufacturing. Any quarter. Time and credit arranged. (Twelve credits, maximum.) *Morris*

254. Special Problems in Dairy Manufacturing. Any quarter. Time and credit arranged. *Morris*

SUGGESTED COURSE FOR MAJORS IN DAIRY MANUFACTURING 1942-43

Freshman

Courses	Credit	Courses	Credit	Courses	Credit
*Botany 21, 22 or 12	6 or 5	*Ag. Econ. 53a	3	*Ag. Engineering 4	4
*Mathematics 34	3	*Ag. Econ. 53b	3	*Zoology 2	5
*Mathematics 35	5	*Sociology 70, 10 or Pol. Science 10	3 or 5	*Dairy 3	3
Mathematics 46	5			*Speech 1	5
				Plant Ind. Courses	6

Sophomore

*Chemistry 3	5	*Dairy 6	3	Bus. Admin. 25	5
*Chemistry 4	5	Geology 1	5	Textiles 15	2
*Chemistry 5	5	*Ag. Econ. 62	5	English 5	3
*Bacteriology 1 & 3	6	*Dairy 5	2	*Poultry Hus. 1	3
English 10	5	Psychology 54	3		

Junior

*Chemistry 121	5	*Dairy 105-6-7	6	Bacteriology 111	5
*Chemistry 122	5	*Dairy 103	5	*English 110 or 111	4
Physics 6	5	Zoology 111 or 112	4 or 5	*Language & Arts	3-5
*Bacteriology 104	5	*Accounting 100	3	Chemistry 102-103	6

Senior

Physics 7	5	*Dairy 101	5	*Dairy 110	5
*Chemistry 107	4	*Dairy 102	5	Mathematics 110	3
*Chemistry 108	4	*Dairy 151-2-3	6	Bacteriology 116	**

*Required courses.

**Arranged.

(Note: Chemistry 10, 11 and 12 may be substituted for Chemistry 3, 4, 5, 121, and 122.)

Horticulture

F. M. COE, *Associate Professor;* A. L. STARK, *Research Associate Professor.*

The instructional work in horticulture provides not only for the needs of the student who wishes to specialize in this field of service, but offers general introductory and service courses to students specializing in other fields of agriculture. Theoretical instruction in horticultural science is accompanied by practical work with the actual trees, fruits, vines, and plants. Practice in identification of varieties, pruning, grafting, budding and other methods of propagation, spraying, planting, pollination and hybridizing of fruit plants, grading, and packing of fruits is given in laboratory exercises which are carried out in greenhouses, nurseries, gardens, packing houses, vineyards, berry plantations and orchards of the College and Experiment Station as well as in laboratories. Campus facilities are supplemented by field trips to private orchards and nurseries in central and northern Utah.

Students specializing in horticulture may elect to major in general horticulture or in the specialized field of pomology. Basic training in botany, plant pathology, chemistry, physics, entomology, soils, irrigation, agricultural economics, genetics, English and speech should precede or accompany course work for a major or minor in horticulture. Students should elect advanced work in soils, plant breeding, botany, and entomology.

Professional courses of study with a major in horticulture may be followed, leading to commercial fruit growing and marketing, Smith-Hughes teaching, agricultural inspection, and extension work. An approved scientific course is also offered, leading to graduate study in preparation for technical research and collegiate instruction.

For a major in horticulture, the following courses are required: Hort. 1, 6, 101, 102, 107, 108, 110, 112, 151, 152, 153, 154, 155; Vegetable Crops 1, 105, Landscape Architecture 3. Supporting courses recommended are: Zoology 108, 109, 112; Botany 23, 30, 120, 130, 135; Agron. 106, 108, 109, 110; A. E. 10, Ag. Econ. 114.

1. Tree Fruit Production. Outlook, selection of locations and varieties, propagation of fruit plants, establishing orchards, pruning and training, soil management, thinning, pollination, pest control, harvesting and marketing. Four credits. Section 1, Fall, M. W. F. 8; Section 2, Spring, M. W. 11, W. 1. Labs., Section 1, Fall, W. or Th. 2-5; Section 2, Spring, T. or W. 2-5. *Coe*

6. Plant Propagation. The fundamental principles underlying the propagation of plants: seedage, graftage, cuttage, layerage, separation, and division. Practice is taught in laboratory exercises in the greenhouse and nursery. Designed for anyone interested in plant science or plants as a hobby. Three credits. Winter, T. Th. 10; Labs., M. 2-5. (Not given 1942-43.) *Coe*

8. Small Fruit Production. Commercial and home culture of strawberries, blackberries, dewberries, raspberries, gooseberries, currants, and grapes, including (a) location; (b) soil management; (c) botany, varieties, classification; (d) propagation, planting, and culture; (e) pruning and training; (f) harvesting and marketing. Three credits. Winter, T. Th. 10 Lab., M. 2-5. *Coe*

101, 102. Advanced Pomology. A two-term course covering the fundamental principles and practices of orcharding as developed by research in horticultural science. Course 101 includes geography of fruit production, climatic factors, temperature relations, propagation, rootstocks, and water relations; course 102 covers nutrition, pruning and training, fruit setting, thinning, soil management. The practical application of fundamental principles is considered. Courses 110, 111, 112 (Orchard Practice) are laboratories for these courses, and should accompany them. Prerequisites, Botany 23; Chem. 12 or 121; Agronomy 6. Alternates with 151. Three credits each quarter. Fall M. W. F. 10. Winter, M. W. F. 10. (Not given 1942-43.) *Coe*

107. Spraying. Fungicides and insecticides used in the control of insects and diseases; preparation, properties, and use in spraying; spray machinery and equipment, dusts, and dusting; spray schedules, economics of spraying; fumigation; design, care and operation of spray equipment. Prerequisites, Chem. 4 or 11; Botany 130 (Plant Pathology); and Zoology 108 (Ag. Entomology). Three credits. Spring, Lect. M. W. 9; Lab., M. 2-5. (Not given 1942-43.) *Coe*

110, 111, 112. Orchard Practice. Laboratory course to accompany 101, 102, 152. Advanced field work in seasonal orchard operations. Fall quarter includes picking, grading, packing and storage of fruits, exhibiting and judging, and field trips to orchards, packing plants and storages. Winter quarter includes practice in bench grafting, seed sterilization, stratification, handling seedlings, pruning, training, grafting, orchard planning, spraying and packing house machinery care and adjustment. Spring operations are pruning, renovation, grafting, planting, pollination, crossing, spraying, cultivation, irrigation, and thinning. Prerequisite, Hort. 1. One credit each quarter. Fall, F. 2-5; Winter, T. 2-5; Spring, M. 2-5. *Coe*

151. Systematic Pomology. Study of varieties of fruits, origin, classification, identification, judging, adaptation, important pomological groups and their relationships. Prerequisites, Hort. 1. Alternates with 101. Four credits. Fall, T. Th. 11; Labs., T. Th. 8-10. *Coe*

152. Commercial Pomology. Problems in handling and marketing of fruits: maturity indexes, picking, grading, packing, transportation, storage, distribution, buildings, equipment, roadside and local marketing. Hort. 110 should precede this course. Prerequisite, Hort. 1. Alternates with 102. Three credits. Winter, T. Th. 11, W. 1. *Coe*

153, 154, 155. Seminar. Oral and written reports on research work and original papers on pomological problems such as fruit breeding, storage, fruitfulness, pollination, water relations, hardiness, etc. One credit each quarter. Fall, Winter, and Spring, M. 1. *Coe*

156. Special Problems. Advanced problems in pomology for qualified seniors or graduate students. Assigned readings and research work in library, laboratory, greenhouse or field, presented as term papers. Registration by permission only. Any quarter. One to three hours' credit. Time and credit arranged. *Coe*

201, 202, 203, 204-A, 204-B. Research. Original research on Pomological Problems for graduate students taking a major or minor in Horticulture. Registration by permission only. Three to ten credits. Course 201, Fall quarter; 202, Winter quarter; 203, Spring quarter; 204-A and 204-B, Summer session and Intersession, respectively. *Coe and Stark*

Landscape Architecture

L. S. MORRIS, *Associate Professor.*

In addition to courses of popular interest for students from other colleges seeking an appreciation of landscape art, professional courses of study for a major in Landscape Architecture are offered, leading to opportunities both in private practice and in public employ as landscape architects, city planners, park superintendents, landscape engineers in state and federal holdings for recreation areas, as well as other phases of government service.

3. Elements of Landscape Architecture. Principles of design as applied to different types of landscape projects. The planning of home grounds is emphasized. Course is designed for women as well as men and is of particular value to those wanting a general knowledge of landscape architecture. A field trip required. Three credits. Fall, Sec. 1; Spring, Sec. 2; Lecture, Fall, T. Th. 8; Spring, T. Th. 11; Lab., T. 2-5. *Morris*

10, 11. Ornamental Woody Plants. Classification, identification, ecological requirements, and uses of woody plants for landscape purposes. Pruning and maintenance of plants. Native and introduced plants studied. Alternates with 12 and 13. Three credits each quarter. Fall and Spring, T. Th. 9; Lab., Th. 2-5. (Not given 1942-43.) *Morris*

12, 13. Garden Flowers. Herbaceous plants classified and identified. Use is made of botanical keys to facilitate the determination of unknown plants. Plants also classified as to use and adaptation. Given alternate years with 10 and 11. Two credits each quarter. Fall and Spring, T. Th. 9. *Morris*

20. Drawing. A general course in drawing to acquaint the student with the use of instruments. Necessary to all courses in design. Lettering, general drafting, perspective drawing, light and shade studied. Three credits. Any quarter. M. W. F. 2-5. *Morris*

30. History and Literature of Landscape Architecture. The history of landscape architecture for antiquity to the present time. Its relation to architecture and other allied arts. Characteristics of landscape styles in the various countries studied. Five credits. Winter, Daily 9. *Morris*

60, 61, 62. Architectural Design. The design of such architectural features as used in the garden and landscape; pergolas, arbors, fences, retaining walls, steps, garden houses. Criticism given by practicing architects. Two credits each quarter. Fall, Winter, and Spring, T. Th. 2-5. *Morris*

110. City and Community Planning. The history of various types of city plans. Planning of street pattern, civic center, recreation, safety factors. Three credits. Winter, M. W. F. 10. *Morris*

140, 141, 142. Landscape Design. The design of private and public properties based on the principles of utility and composition. Prerequisite, Landscape Architecture 3 and 20. Two credits. Fall, Winter, and Spring, T. Th. 2-5. *Morris*

150. Planting Design. Arrangement of plants in garden and landscape. Planning exercises and field observation. Prerequisites, Landscape Architecture 10, 11, 12, 13, 60, 61. Two credits. Fall, T. Th. 2-5. *Morris*

160, 161, 162. Landscape Construction. Grading, drainage, sprinkling systems, landscape structures, cost estimates. Three credits each quarter. Fall, Winter and Spring, M. W. F. 2-5. *Morris*

170, 171, 172. Advanced Landscape Design. The design of home grounds, estates, parks, cemeteries, building groups, and recreational areas on various types of topography. Three credits each quarter. Fall, Winter and Spring, M. W. F. 2-5. *Morris*

175. Recreational Planning. The principles of design, construction and operation of recreational areas and facilities with special emphasis on state and national parks and forest areas. Three credits. Spring, T. Th. 2-5, and three other hours. *Morris*

180, 181. Planting Design. Pictorial compositions and planting plans developed together. This course is designed to develop the student's ability to visualize the finished landscape. Two credits each quarter. Winter and Spring, T. Th. 2-5. *Morris*

190. Special Problems. Selected problems to meet the needs of individual students for completion of training. Registration by permission only. Any quarter. Time and credit arranged.

TECHNICAL COURSE IN LANDSCAPE ARCHITECTURE

Freshman Year

	Credit
Creative Expression Art 104	4
Hist. and Apprec. of Architecture Art 26	3
Algebra Math 34, 35	8
Trigonometry Math. 46	5
General Botany Botany 21, 22, 23	9
Inorganic Chemistry Chemistry 1 or 10	5
Elem. of Landscape Architecture Landscape Architecture 3	3
Drawing Landscape Architecture 20	3
Hist. and Lit. of Landscape Arch. Landscape Architecture 30	5
Elective	5
	50

Junior Year

Principles of Genetics Zoology 112	5
Economics 51 or Ag. Econ. 53a-53b	5-6
Advanced Composition English 110	4
Geology 1	5
History 4 or Sociology 70	5
Plant Materials (Herbaceous) Landscape Architecture 12, 13	4
Landscape Arch. 140, 141, 142	6
Landscape Design	
Landscape Construction Landscape Arch. 160, 161, 162	9
Perspective Art 124	3
Elective	3
	50-51

Sophomore Year

	Credit
Plane surveying Engineering 81, 83	8
Mapping and Office Practice Engineering 82	3
Creative Expression Art 104	4
Plant Materials (Woody) Landscape Arch. 10, 11	6
Plant Propagation Horticulture 6	3
Sophomore Composition English 10	5
Entomology Zoology 108	4
Architectural Design Landscape Arch. 60, 61, 62	6
Soils Agronomy 6	5
Taxonomy of Vascular Plants Botany 30	5
Elective	1
	50

Senior Year

Irrigation Agricultural Engineering 12	4
Vegetable Production Veg. Crops 1	4
Fundamentals of Speech Speech 1	5
Planting Design Landscape Arch. 150, 180, 181	6
Advanced Landscape Arch. Design Landscape Arch. 170, 171, 172	9
Building Construction Woodwork 161	3
Horticulture Seminar Hort. 153, 154, 155	3
Elective	17
	50

CURRICULUM IN ORNAMENTAL HORTICULTURE

Freshman Year

	Hrs.
Bot. 21, 22, 23	9
Math. 34, 35	8
Ag. Econ. 53a, 53b	6
Hort. 6 Propogation	3
Gen. A. H. 1	3
Landscape Arch. 3, 30	8
Zoo. 2	5
Hort. 1	4
Dairying 1, 3 or 110	3 or 5
	49 or 51

Sophomore Year

	Hrs.
Bot. 30	5
Chem. 10, 11	10
Bact. 1, 2	5
Geol. 3	5
L. A. 20	3
Physics 6, 7	10
Eng. 5, 10	8
L. A. 10, 11	4
Art 4	2
	52

Junior Year		Senior Year	
Agr. 106, 110	9	A. E. 10 (Irrigation)	4
Bot. 120, 130	10	Zoo. 112	5
Chem. 121, 122	10	Veg. Crops 120	4
L. A. 12, 13	6	Hort. 156	3
English 110	4	Hort. 153, 154, 155	3
Zoo. 108	4	Hort. 107	3
Art 104	2	L. A. 190	4
Poultry 1 or 101	3	Political Science 10	5
Ag. Econ. 110	3	Botany 130	5
		Electives	15
	51		51

Poultry Husbandry

BYRON ALDER, *Professor;* CARL FRISCHKNECHT, *Associate Professor.*

1. **General Poultry.** A study of breeds, judging, incubation, brooding, feeding, marketing. Designed to meet the needs of the students wishing a general knowledge of the poultry industry and the problems of production, and a foundation upon which other courses are built. Three credits. Winter, M. W. F. 11. Spring, M. W. F. 9. *Alder and Frischknecht*

2. **General Poultry Laboratory.** Covers the same work as Poultry 1, with practical laboratory problems. One credit. Winter or Spring, T. or W. 2-5. *Alder and Frischknecht*

8. **Turkey Production.** A study of the breeds, breeding, brooding, feeding, and marketing of turkeys. Special problems involved in small farm flock or large commercial flock management are emphasized. Two credits. Winter, T. Th. 9. *Alder*

10. **Poultry Practice.** Elementary practice at the poultry yards. Prerequisite, Poultry 1. Spring. Time and credit arranged. *Alder and Frischknecht*

101. **Poultry Production.** A study of poultry production problems, breeds, judging, selection, feeding and management. Poultry Lab. 102 should accompany this course. Three credits. Winter, M. W. F. 8. *Alder*

102. **Poultry Production.** Laboratory practice in selection, judging, and other production problems. One credit. Winter or Spring, T. or W. 2-5. *Alder and Frischknecht*

104. **Incubation and Brooding.** This course is designed to familiarize the student with the special problems involved in incubation or hatchery operation and the brooding, feeding, and rearing of chicks. The advantages and disadvantages of battery, hot water, electric, coal burning, and gas brooders are emphasized. Two credits. Spring, T. Th. 9. *Frischknecht*

105. **Poultry Management.** Problems of location of poultry farm, farm planning, renewing the flock, feeding, disease control, marketing, and other problems affecting labor income are studied in detail. Prerequisite, Poultry 1. Three credits. Spring, M. W. F. 8. Poultry 105 and 106 given alternate years. *Frischknecht*

106. **Breeds and Breeding.** A study of the origin and development of the breeds and varieties of poultry and their adaptability to intermountain conditions; production of hatching eggs for commercial hatcheries; R. O. P. Breeding, and the National Poultry Improvement Plan; and important inheritance problems in poultry. Prerequisite, Poultry 1 or 101, and An. Hus. 15, or Zoo. 112. Three credits. Spring, M. W. F. 8. (Not given 1942-43.) *Frischknecht*

107. **Poultry Feeds and Feeding.** A study of nutrition problems, the feeds, and methods of feeding. Developing rations for special needs and home mixing. Prerequisite, Poultry 1. Three credits. Winter, M. W. F. 10. *Alder*

125. **Special Problems.** Special assignment to work out certain information on special problems. Prerequisites, Poultry 1, 104, and 107. Winter and Spring. Time and credit arranged. *Alder and Frischknecht*

126. **Seminar.** Current poultry literature studies; assigned problems and special topics. One credit. Winter. Time arranged. *Alder and Frischknecht*

127. Advanced Poultry Practice. Special practice at the poultry yards. Prerequisites, Poultry 1, 104, and 107. Time and credit arranged. Winter and Spring. *Alder and Frischknecht*

Poultry Diseases. (See Veterinary Science 170.)

Vegetable Crops

L. H. POLLARD, *Associate Professor.*

Students majoring in vegetable crops are required to take the following courses: Vegetable Crops 1, 105, 120, 121, 161, 162, 163; Botany 120, 135; Hort. 1, 8; Agron. 6 or 106, 110.

Students who plan to do graduate work may be admitted to a technical course in Vegetable Crops by permission of the Head of the Department and the Agricultural Advisory Council.

1. Vegetable Production. The production, harvesting, handling, and storage of vegetables. Four credits. Fall, Winter, M. W. F. 11; Lab., M. or T. 2-5. *Pollard*

105. Major Vegetable Crops. A study of the classification, identification, origin, history, types, and uses of our vegetable crop plants. Special emphasis will be placed on those crops of major importance in Utah. This course alternates with 121. Prerequisite, Veg. Crops 1. Four credits. Fall, M. W. F. 9. Lab., T. Th. 9-12. (Not given 1942-43.) *Pollard*

120. Vegetable Improvement. The fundamental principles underlying the improvement of vegetables will be studied. Prerequisite, Agronomy 109. Four credits. Spring, M. W. F. 8; Lab., W. 2-5. (Not given 1942-43.) *Pollard*

121. Advanced Vegetable Crops. A consideration of the economic ecological, and physiological factors underlying vegetable production, based on a study of experimental results. Prerequisites, Veg. Crops 1, 105; Agron. 6 or 106; Bot. 120. This course alternates with 105. Three credits. *Pollard*

160. Special Problems. Problems of production and breeding of vegetable crops. Registration by permission only. One to three credits, any quarter. Time arranged. *Pollard*

161, 162, 163. Seminar. Reports on research work and presentation of original papers. One credit each quarter. Time arranged. *Pollard*

210. Research. Original research on vegetable crop production or breeding problems for graduate students taking a major or minor in vegetable crops. Three to ten credits. Any quarter. Time arranged. *Pollard*

Veterinary Science

D. E. MADSEN, *Professor;* WAYNE BINNS,* *Assistant Professor;* H. M. NIELSEN, *Research Assistant;* W. H. KRULL, *Collaborator in Research, U. S. D. A.*

Courses in Veterinary Science are designed not for training specialists in this field but as essential links for complete instruction in Animal Husbandry, Dairy Husbandry, and Poultry Husbandry studies. Animal hygiene and practical control of disease are stressed. Pre-veterinary courses, for those wishing to later obtain Veterinary degrees elsewhere, may be conveniently taken at this school.

10. Veterinary Science. An introductory course to anatomy and physiology and the common ailments of domestic animals; the most prevalent diseases, their distribution, causes, symptoms, course, diagnosis, and treatment. Five credits. Fall, Winter, Daily 8. *Binns*

52. Clinic. Students are given practical experience in common operations on farm animals. Castration, treatment of wounds, premise disinfection, testing procedures and autopsy of livestock and poultry are considered. One credit. Fall, Spring, M. 2-5. (Sections limited to 18.) *Binns*

170. Poultry Diseases. The common diseases affecting poultry in this region. Lectures and practical demonstrations. Three credits. Spring, M. W. F. 9. (Not given 1942-43.) *Madsen*

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*On leave.

SCHOOL OF ARTS AND SCIENCES

N. A. PEDERSEN, *Dean*

Departments

Bacteriology and Biochemistry 106

Botany and Plant Pathology 108

Chemistry 110

English 113

Geology 118

History 120

Mathematics 121

Modern Languages and Latin 122

Physics 125

Physiology, Public Health and Hygiene 128

Speech 129

Zoology and Entomology 133

General Information

IN ADDITION to training students to carry on their work in the technical divisions of the Institution, the School of Arts and Sciences offers opportunity to all the students of the College for a liberal education. It also enables properly qualified students to major in its departments and thus begin preparation for a career.

The School of Arts and Sciences includes the departments of Bacteriology and Biochemistry, Botany, Chemistry, English and Speech, Geology, History, Mathematics, Modern Languages and Latin, Physics, Physiology, Public Health and Hygiene, and Zoology and Entomology. The School also provides for premedical and predental work.

For requirements for admission, certification, and graduation, see pages 49 to 59.

PREMEDICAL TRAINING

The School of Arts and Sciences offers the necesary courses to provide a premedical training which will satisfy the entrance requirements of Medical Schools of the United States and Canada.

SUGGESTED PREMEDICAL SCHEDULE

Freshman Year

(Lower Division)

	F	W	S
Chem. 3, 4, 5	5	5	5
French, German or Latin	5	5	5
Math. 34, 35, 46	3	5	5
Military Science	1	1	1
Electives	4	2	2
Total	18	18	18

Sophomore Year

(Lower Division)

	F	W	S
French, German or Latin	5	5	—
English 10	—	—	5
Physics 20, 21, 22	5	5	5
Zoology 3, 4	5	5	—
English	—	—	5
Military Science	1	1	1
Electives	2	2	2
Total	18	18	18

Junior Year

(Upper Division)

	F	W	S
Chem. 121, 122	5	5	—
Chem. 102, 103	—	3	5
Zoology 117, 118	4	5	—
English 110	—	—	4
English	5	—	—
Electives	3	4	12
Total	17	17	17

Because it has become virtually impossible to gain admission to medical school without a degree, students should plan to complete requirements for a

Bachelor of Science degree. Electives should be selected to complete the lower division group requirements and fulfill the requirements for a major. As preparation toward Medicine a major in Zoology or Chemistry is recommended. To complete a major the following additional courses are required:

For Zoology major: Zoology 112, 114, 115, 116, 119, 124, 126, 131. Total 25 hours.

For Chemistry major: Chemistry 104, 105, 106, 109, 110, 111, 123; Mathematics 98, 99; and 5 hours additional senior college chemistry. Total 41 hours.

PREDENTAL WORK

Students planning to go into the profession of Dentistry may take the necessary courses in the School of Arts and Sciences to satisfy the requirements for admission to any of the Dental Schools in the United States.

Two years is the usual minimum academic residence requirement for admission to Dental School but students who find it possible are urged to take three years of predental training.

SUGGESTED PREDENTAL SCHEDULE

Freshman Year

(Lower Division)

	F	W	S
Chemistry 3, 4, 5	5	5	5
German 1, 2, 3 (or electives)	5	5	5
Zoology 3, 4	5	5	—
Mathematics 34	—	—	3
Military Science or P. E.	1	1	1
Electives	—	—	2
Total	16	16	16

Sophomore Year

(Lower Division)

	F	W	S
German 101	5	—	—
English 10	5	—	—
Physics 6, 7	5	5	—
Psychology 3	—	5	—
History 4	—	5	—
Bacteriology 1, 2	—	—	5
English	—	—	5
Health Education 14	—	—	3
Military Science or P. E.	1	1	1
Electives	2	2	4
Total	18	18	18

Junior Year

(Upper Division)

	F	W	S
Chemistry 121, 122	5	5	—
Zoology 117, 118, 119	4	5	4
Zoology 112	—	—	5
Political Science 10	5	—	—
English 110	—	4	—
Sociology 70	—	—	5
Electives	3	3	3
Total	17	17	17

Students planning to receive a B.S. degree on a combined curriculum (3 years here and one year in a medical or a dental school) must fulfill the group and composition and military requirements of this college and must complete a minimum of 141 credits at this institution.

Bacteriology and Biochemistry

Administered jointly by the School of Agriculture and the School of Arts and Sciences

J. E. GREAVES, *Professor;* K. R. STEVENS, *Associate Professor;* L. W. JONES, *Instructor.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students majoring in the Department of Bacteriology and Biochemistry must complete Physics 6, 7, or 21, 22; Mathematics 46; Chemistry 12 or 122; Botany 21, 22; and Bacteriology 1, 2, 20, 107, 109, 110, 111, 112.

1. Elementary Bacteriology. Deals with the biology and significance of bacteria and other microorganisms; their morphology and physiology; and introduces the fundamental principles governing the bacteriology of water, sewage, milk, food sanitation, communicable diseases, etc. Where possible this course should be accompanied by Bacteriology 2. Four credits. Fall or Winter, M. T. Th. F. 10, 11. Spring, M. T. Th. F. 9, 11. *Staff*

2. Elementary Bacteriology Laboratory. Experiments on the more important phases of Elementary Bacteriology. One credit. Fall, Winter or Spring, M. T. W. Th. or F. 2-5. *Staff*

10. Engineering Bacteriology. Consideration is given to those fundamentals and principles of bacteriology which are required in special phases of engineering. Two lectures and one 3 hour laboratory period each week. Three credits. Fall, T. Th. 10; Lab., Th. 2-5. *Stevens*

20. Bacteriological Technique. Training in advanced experiments. Open to qualified students. Two credits. Fall, Winter or Spring, M. W. 2-5. *Staff*

100. Soil Microbiology. Microorganisms are considered in relation to soil fertility. Graduate students who have taken Bacteriology 111 may arrange with the professor in charge for graduate credit, and register for 200. Where possible this course should be accompanied by Bacteriology 101. Prerequisite: Bacteriology 1, 2; Agronomy 6 or 106; Organic Chemistry. Three credits. Winter, M. W. F. 11. Given in alternate years. *Greaves*

101. Soil Microbiology Laboratory. Experiments to demonstrate the fundamentals discussed in the lecture course. Two credits. Winter, T. Th. 2-5. *Greaves*

102. Industrial Microbiology. The relation of microorganisms to industrial fermentations. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two lectures; 1 three-hour laboratory period. Three credits. T. Th. 9, F. 2-5. (Not given in 1942-43.) *Stevens*

104. Dairy Bacteriology. The microorganisms of milk and dairy products and their relation to the production, spoilage, and sanitation of such products. Prerequisite: Bacteriology 1, 2. Three credits. Fall, M. W. F. 8. *Jones*

105. Dairy Bacteriology Laboratory. Experiments to demonstrate the fundamentals discussed in the lecture course. Two three-hour laboratory periods. Two credits. Fall, T. Th. 2-5. *Jones*

106. Pathogenic Bacteriology. Deals with the properties and characteristics of pathogenic microorganisms and their relation to the cause, prevention,

and control of infectious diseases. Prerequisites: Bacteriology 1, 2. Two lectures; two three-hour laboratory periods. Four credits. Spring, T. Th. 9, M. W. 2-5. *Stevens*

107. Systematic and Determinative Bacteriology. Largely individual work in isolating, identifying, and classifying bacteria. Prerequisite: Bacteriology 1, 2. Two credits. Winter, M. W. 2-5. *Stevens*

108. Chemical Bacteriology. Composition of and transformations due to bacteria. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two credits. Fall, M. W. 1. (Not given in 1942-43.) *Greaves*

109, 110. Advanced Bacteriology.** Special phases of bacteriology. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Bacteriology 109 is not a prerequisite for 110. Two credits each quarter. Winter and Spring, M. W. 1. *Jones and Greaves*

111. Biochemistry. Transformations going on in the plant and animal. Prerequisite: Organic Chemistry. Five credits. Spring, Daily 10. *Greaves*

112. Biochemistry Laboratory. Experiments to accompany Bacteriology 111. Two credits. Spring, T. Th. 2-5. *Greaves*

113, 114, 115. Advanced Biochemistry. A study of the chemical transformations going on in the animal body. The class will be conducted much as a seminar. Graduate students may arrange with the professor in charge for graduate credit, and register for 213, 214, 215. Two credits each quarter. Fall, Winter, and Spring, T. Th. 1. *Greaves*

116. Sanitary Analysis. Lectures and experiments covering the methods used by the sanitary inspector in examining water, milk, and other foods. Prerequisite: Bacteriology 1, 2 Chemistry 103. One lecture: 2 three-hour laboratory periods. Three credits. Spring, W. 1, T. Th. 2-5. *Jones*

120. Food Microbiology. A study of the microorganisms involved in food production, distribution, and preservation. Prerequisite: Bacteriology 1, 2; Organic Chemistry. Two lectures; 1 three-hour laboratory period. Three credits. Fall, M. W. 9, F. 2-5. *Stevens*

125. Clinical Laboratory Methods. Open to properly qualified senior or graduate students. Two credits. Spring, W. F. 2-5. *Jones*

207. Research. The laboratory and library facilities are especially equipped for advanced students in bacteriological and biochemical investigations in agriculture, household sciences, the industries, sanitary science, and veterinary science. One to five credits. Any quarter. Time arranged. *Staff*

217, 218, 219. Seminar. May be taken by properly prepared undergraduate students by registering for 117, 118, 119. Two credits each quarter. Any quarter. Time arranged. *Staff*

TECHNICAL COURSE IN BACTERIOLOGY

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Math. 34	3	Math. 35	5	Math. 46	5
Bot. 21	3	Bot. 22	3	Bact. 20	2
Ag. Econ. 53a	3	Ag. Econ. 53b	3	Soc. 10	3
Bact. 1, 2	5	Lang.-Arts	3	Lang.-Arts	5
M. S. or P. E.	1	M. S. or P. E.	1	M. S. or P. E.	1
Psy. A	½	Psy. B	½	Psy. C	½
	15½		15½		16½

**Not given 1942-43.

Sophomore

Zoology 3	5	Zoology 4	5	English 10	5
Chem. 3	5	Chem. 4	5	Chem. 5	5
Physics 6	5	An. Hus. 10	3	Physics 7	5
M. S. or P. E.	1	M. S. or P. E.	1	M. S. or P. E.	1
Electives	1	Electives	3	Electives	1
	17		17		17

Junior

Chem. 121	5	Chem. 122	5	Biochem. 111, 112	7
Bact. 104, 105	5	Chem. 102	3	Chem. 103	3
Vet. Sci. 10	3	Electives	9	Electives	7
Electives	4				
	17		17		17

Senior

Land. Hort. 6	3	Bact. 100, 101	5	Bact. 106	4
Agron. 106	5	Bact. 109	2	Bact. 110	2
Eng. 110	4	Electives	10	Electives	11
Electives	5				
	17		17		17

Botany and Plant Pathology

Administered jointly by the School of Agriculture and the School of Arts and Sciences

B. L. RICHARDS, *Professor;* F. B. WANN, BASSETT MAGUIRE, *Associate Professors;* R. S. SNELL*, *Assistant Professor;* R. M. CHRISTIANSEN, *Research Assistant;* H. L. BLOOD, MICHAEL SHAPOVALOV, *Collaborators in Research, U. S. D. A.*

In addition to course work, the Department of Botany offers special opportunity for research in plant pathology, plant physiology, plant anatomy and taxonomy. The research and graduate possibilities in plant pathology are greatly augmented by the cooperating division of the United States Department of Agriculture under the direction of H. L. Blood and M. Shapovalov.

See pages 53 and 54 for courses that may satisfy group requirements.

REQUIREMENTS FOR A MAJOR IN BOTANY OR PLANT PATHOLOGY

Bot. 21, 22, 23 General Botany
Bot. 30 Taxonomy
Bot. 116 Micro-Technique
Bot. 117 Plant Anatomy
Bot. 120 Plant Physiology
Bot. 130 Plant Pathology
Bot. 150 Mycology
Bot. 240 Seminar

Botany 21, 22, 23, 30, 120 and 130 or equivalent required for teaching major.

Recommended additional courses for the following major fields:

Plant Pathology
Bot. 121 Water Relations
Bot. 131 Field Crop Diseases
Bot. 135 Fruit Crop Diseases
Bot. 140 Forest Pathology
Bot. 151 Mycology

Taxonomy
Bot. 104 Tax. Poisonous Pls.
Bot. 108 Agrostology

Plant Physiology
Bot. 121 Water Relations
Bot. 224 Advanced Physiology

1. Principles of Biology. A fundamental course in the basic life principles as illustrated in both plant an animal forms. Special attention will be given

*On leave.

to the nature and structure of protoplasm, differentiation in plant and animal cells, adaptation, development and reproduction, heredity and evolution, types and phylogenetic relationships as exhibited in the big groups of plants and animals. For junior college students except those who may elect Botany 21, 22, 23, or Zoology 3 and 4. Four lectures and one laboratory. Five credits. Fall, Section 1, Daily 9; Section 2, M. T. W. F. 10; Section 3, M. T. W. F. 11; Section 4, M. T. W. Th. 2; Lab., T. or Th. 8-10 or 3-5.
Staff in Botany and Zoology

21, 22, 23. General Botany. A general course in the fundamental principles of plant biology dealing with the structure, nutrition, growth, reproduction, and relationships of plants. Continuous through three quarters. Consideration will be given successively to: anatomy and functions of the flowering plants; comparative study of representatives of the plant kingdom from an evolutionary point of view; inheritance; and recognition of important vascular plant families. Three credits each quarter. Fall, Winter and Spring. Lect. T. Th. 8, 9, 10; Lab., M. W. or F. 8-11, or any day 2-5. *Snell*

Students majoring in General Agriculture can satisfy their botany requirements by completing Botany 21 and 22.

30. Taxonomy of Vascular Plants. A fundamental course dealing with the kinds, relationships, and classifications of the vascular plants chiefly of this region. Prerequisites, Botany 21, 22, 23. Five credits. Spring, T. Th. 9; Lab., M. W. 2-5, T. Th. 2-5. *Maguire*

104. Taxonomy of Poisonous Plants. A course which deals with the recognition, distribution, and ecology of the poisonous plants, native and introduced, which occur in the intermountain West with particular emphasis upon those found in the state of Utah. Prerequisite, Botany 30. Two credits. Winter, M. 10; Lab., M. 2-5. *Maguire*

108. Agrostology. A taxonomic study of native and imported grasses of the western ranges. Special attention given to species playing an important part in grazing and soil binding. Prerequisites, Botany 21, 22, 23, 30. Four credits. Winter, Lect., T. Th. 11; Lab., T. Th. 2-5. *Maguire*

110. Limnology. A course treating the physical, chemical and biological factors affecting the occurence and productivity of the fresh (and brackish water) water biota. Special attention is given to field methods. Botany 30, Botany 120, and Zoology 103 (or equivalent), are desirable precursors to Botany 110. Four credits. Fall, T. Th. 9; Lab., T. Th. 2-5. *Maguire*

116. Micro-Technique. Methods of killing and preserving plants and the preparation of permanent sections of plant material. Designed especially for teachers of Botany and research students in all the plant sciences. Four credits. Spring, Lect., T. Th. 1; Lab., T. Th. 2-5. (Not given 1942-43.) *Snell*

117. Plant Anatomy. A detailed study of structure of vascular plants. Structure is consistenly correlated with function. Interpretation of laboratory materials is emphasized. Prerequisites, Botany 21, 22, 23. Four credits. Spring, Lect., T. Th. 1; Lab., T. Th. 2-5. To alternate with Botany 116. *Snell*

120. Elementary Plant Physiology. A course dealing with fundamental principles of absorption, mineral nutrition, food manufacture, metabolism, translocation, and growth. Prerequisites, Botany 21, 22, 23, and Chemistry 12 or 121. Five credits. Winter or Spring, M. W. F. 9; Lab., Winter, T. Th. 8-11; Spring, T. Th. 8-11 or 2-5. *Wann*

121. Water Relations of Native Plants. Consideration of rooting habits, sap concentration, transpiration and water requirements of native plants in relation to distribution and adaption to environment. Prerequisite, Botany 120. Three credits. Winter, M. W. F. 11. *Wann*

***130. Principles of Plant Pathology.** Fundamental principles underlying diseases in plants. The types of diseases and methods of study are such as will give the student a comprehensive view of the subject of Plant Pathology.

*Open to short course students.

Prerequisites, Botany 21, 22, 23. Five credits. Fall, Lect., M. W. F. 11; Lab., M. F. 2-5. *Richards*

131. Field and Forage Crop Diseases. Diseases of field and forage crops with special emphasis on the factors underlying their cause, development, and control. Prerequisite, Botany 130. Four credits. Winter. Alternates with Botany 135. Lect., M. W. 11; Lab., T. Th. 2-5. (Not given 1942-43.) *Richards*

135. Vegetable and Fruit Crop Diseases. Diseases of vegetable and fruit crops. Prerequisite, Botany 130. To alternate with Botany 131. Four credits. Winter. Lect., W. F. 11; Lab., M. F. 2-5. *Richards*

140. Forest Pathology. Study of the nature, cause and control of diseases affecting forest trees. Factors inducing loss in forest products are also emphasized. Prerequisites, Botany 21, 22, and 23. Four credits. Winter, Lect., W. F. 10; Lab., T. Th. 9-12. *Richards*

150. Mycology. Morphology and taxonomy of the Phycomycetes and Ascomycetes with emphasis on economic forms. Prerequisites, Botany 21, 22, 23. Four credits. Fall. Alternates with Botany 151. Arranged. *Richards*

151. Mycology. Continuation of Botany 150, dealing with the morphology and taxonomy of the Basidiomycetes and Fungi imperfecti. Prerequisites, Botany 21, 22, 23. Four credits. Fall. Lect. arranged. Lab., T. Th. 2-5. (Not given 1942-43.) *Richards*

160, 161, 162. Laboratory Methods. Open to qualified senior or graduate students majoring in Botany. One credit each quarter. Fall, Winter, Spring. Time arranged. Graduate credit may be obtained by registering for 260, 261, 262. *Staff*

221. Pathological Technique. Special methods as applied to Plant Pathology, Physiology, and related subjects. Students may register for this course only by special permission. Four credits. Time arranged. Winter. *Richards and Wann*

224. Advanced Plant Physiology. Chemical reaction and transformation underlying the vital processes in plants. Prerequisite, Botany 120. Three credits. Spring, M. W. F. 11. *Wann*

234, 235, 236. Special Problems. Open to qualified students majoring in Anatomy. Taxonomy, Plant Physiology, or Plant Pathology. Fall, Winter, Spring. Two to four credits. Time arranged. *Staff*

240, 241, 242. Seminar. Any quarter. Two credits. Time arranged. *Staff*

250. Research. Open to all qualified college students in Botany and Plant Pathology. Any quarter. Time and credit arranged. *Staff*

Plant Ecology. (See Range Management 126.)

Chemistry

R. L. HILL, SHERWIN MAESER, *Professors;* C. T. HIRST, LLOYD E. MALM, *Associate Professors;* KENNETH HOLT, *Instructor.*

See pages 53 and 54 for courses that may satisfy group requirements.

Chemistry courses 102, 103, 104, 105, 106, 109, 110, 111, 123; Mathematics 98 and 99; and Physics 20, 21, 22 and 5 hours additional senior college chemistry are required for a major in chemistry. Chemistry 3, 4, 5, 104, 105, 106, 121, 122, 123 are required for a teaching major and Chemistry 3, 4, 5, 121, 122, 123, and a good foundation in mathematics and physics for a teaching minor.

1. Introductory Chemistry. An informational course in beginning college chemistry designed for students who have not had high school chemistry and who desire a brief applied survey of the field of inorganic chemistry. This course cannot be used as a prerequisite for organic chemistry. Students with credits in high school chemistry will not be given credit in this course. Five credits. Spring, Daily 11. (Not given 1942-43.) *Maeser*

3, 4, 5. Inorganic Chemistry. A year's course in inorganic chemistry, including a beginning in qualitative analysis. Prerequisite, high school chemistry or physics, or college physics. This course is designed for students with majors in science and for Pre-medics. Students in Agriculture and Home Economics should register in Chemistry 10, 11, and 12. Three lectures and two labs. Five credits each quarter. Fall, Winter, and Spring. M. W. F. 8; Lab., T. Th. 2-5 or 8-11. *Maeser*

10, 11, 12. General Chemistry. A year's course in chemistry for students majoring in Agriculture, Home Economics, Engineering, etc. This course will emphasize the fundamental principles of inorganic and organic chemistry. Both the lecture and the Lab. will be adapted to the needs of students in Agriculture and Home Economics. Prerequisites, High School Chemistry or Physics, or College Physics. Five credits each quarter. Chem. 10, Fall, M. W. F. 9, 10; Labs., T. Th. 9-12 or 8-11; T. Th. 2-5 or M. W. 2-5. Chemistry 11, Winter, same as Chemistry 10, Fall. Chemistry 12, Spring. Same as Chemistry 10, Fall. *Staff*

15. Qualitative Analysis. A course in the theory and practice of inorganic qualitative analysis. Prerequisite, Chemistry 4 or 11. Five credits. Fall, Lec., T. Th. 2; Lab., Daily except Fri. 2-5. (Not given 1942-43.) *Hirst*

102, 103. Quantitative Analysis. A course in the fundamental principles of gravimetric and volumetric analysis. Prerequisite, Chemistry 5 or 15. Three credits each quarter. Winter and Spring, T. Th. F. 2-5. *Hirst*

104, 105, 106. Physical Chemistry. Including atomic, kinetic, and electron theories, gaseous, liquid and solid state; solutions and thermodynamics. Prerequisites, Physics 20, 21, 22; Chemistry 5; Mathematics 98. Three credits each quarter. Fall, Winter, and Spring. M. 1, T. Th. 9. *Maeser*

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. Prerequisites, Chemistry 12 or 122. Winter and Spring quarter, 2 Lect. and 2 Labs. each quarter. Four credits each quarter. Lect., T. Th. 9, Lab., W. F. 2-5. (Not given 1942-43.) *Staff*

109, 110, 111. Physical Chemistry Laboratory. To accompany Chemistry 104, 105, and 106. One credit each quarter. Fall, Winter, and Spring. F. 2-5. *Maeser*

116. Inorganic Preparations. An advanced laboratory course in practical laboratory methods of synthetic inorganic chemistry. Prerequisites, Chemistry 5 or 14 and 103. Any quarter. Time and credit arranged. *Maeser*

120 or 220. Special Courses in Quantitative Analysis. Advanced courses in the analysis of Water, Food, Soil, Urine, Gas and Carbonate and Silicate rocks. Prerequisite, Chemistry 103. Winter or Spring. Time and credit arranged. *Hirst*

121, 122, 123. Organic Chemistry. Fundamental principles of Organic Chemistry. The aliphatic and aromatic hydrocarbons and their derivatives, including a study of the more important theories and reactions employed in organic chemistry. The laboratory work in the Spring quarter will be an advanced course in Organic Analysis and Synthesis. Three lectures and two labs. The lecture in the Spring quarter is largely on chemical theories and reactions. Students desiring a ten-hour course may register for 121 and 122 without 123. Prerequisite, Chemistry 5.

Students desiring to register for lecture separately in Chemistry 123 should register for 123a, 3-hour credit. Five credits each quarter. Fall, Winter, and Spring. Lect., M. W. F. 11; Lab., M. W. 2-5, or T. Th. 2-5. *Malm*

124 or 224. Advanced Organic Preparations. An advanced laboratory course in synthetic Organic Chemistry. Any quarter. Time and credit arranged. *Malm*

Advanced Topics in Organic Chemistry. These courses will deal with the following topics which will be offered on alternate years:

125 or 225. Dyes, Terpenes and Alicyclic Compounds. Two credits. Fall, T. Th. 11. *Malm*

126 or 226. Carbohydrates. (Sugars and Cellulose.) Two credits. Winter, T. Th. 11. *Malm*

127 or 227. Heterocyclic Compounds. Two credits. Winter, T. Th. 11. (Not given 1942-43.) *Malm*

128 or 228. Organometallic Compounds. Two credits. Winter, T. Th. 11. (Not given 1942-43.) *Malm*

129 or 229. Organomedicinal Compounds. Two credits. Fall, T. Th. 11. (Not given 1942-43.) *Malm*

132 or 232. Colloidal Chemistry. A course in the chemistry of colloids and their relationship to the vital processes in plant and animal life. Prerequisite, Chemistry 122. A background in Physical Chemistry is desirable. Three credits. Spring, M. W. F. 9. *Malm*

133 or 233. Colloidal Chemistry Laboratory to accompany course 132. Spring quarter. Time and credit arranged. *Malm*

140 or 240. Physico-Chemical Methods. An advanced laboratory course. Any quarter. Time and credit arranged. *Maeser and Malm*

150 or 250. Advanced Inorganic Chemistry. A study based on the periodic Table and atomic structure. Prerequisite Chem. 103. A course designed for Chemistry seniors and graduates and others with similar training. Given on alternate years. Three credits. Winter, M. W. F. 9. (Not given 1942-43.) *Maeser*

155. Glass Blowing. A laboratory course in the technique of manufacture and repair of laboratory glassware. This course is designed for chemistry majors. Others admitted only by special permission. Any quarter. One credit. Time arranged. *Staff*

160-260. Chemistry Seminar. Fall, Winter, and Spring. One credit. Time arranged. *Staff*

170-270. Chemical Microscopy. Undergraduate and graduate. lecture and laboratory practice. Microscopes and their accessories, as applied to problems in chemistry. Practice in the examination and analysis of inorganic substances containing the more common elements, with special reference to rapid qualitative methods and to the analysis of minute amounts of material. Prerequisite, Physical Chemistry or special permission. Any quarter. Credit and time arranged. *Malm*

171-271. Quantitative Micro-Analysis. Undergraduate and graduate, laboratory practice. Use of the micro-chemical balance, Micro-analysis of Carbon, Hlydrogen, Halogens, Sulfur, Phosphorus, Kjeldahl, Nitrogen, Dumas Nitrogen, Micro molecular weight determinations. Prerequisites, Quantitative Analysis and Physical Chemistry. Any quarter. Credit and time arranged. *Malm*

180 or 280. Research. Senior or graduate students majoring in chemistry may elect research in any branch of the subject. Any quarter. Time and credit arranged. *Staff*

English

N. ALVIN PEDERSEN, WALLACE J. VICKERS, *Professors;* ALMA N. SORENSEN, KING HENDRICKS, WILFORD D. PORTER, *Associate Professors;* IRA N. HAYWARD, MOYLE Q. RICE, ALICE SENOB, *Assistant Professors;* A. J. HANSEN, *Assistant;* CHARLOTTE KYLE, *Assistant Professor Emeritus.*

See pages 53 and 54 for courses that may satisfy group requirements.

English Major Requirements

Students expecting to major in English should complete English 1, 10, 52, and History 34 during the freshman and sophomore years. It is highly desirable to complete also at least one year of a foreign language during these years.

English 1, 10, 52, 105, 118, 119, 160, 162, 163, any three of the following, 161, 170, 175, 180, 190, 191, and five quarters, five hours each, of a foreign language are required of majors in English. They must also maintain a "B" grade average in their major subjects. **Teaching majors in English meet the same requirements except foreign language.**

Students whose major interests are divided between English and Speech may take a composite English-Speech major. Such a major relieves the student of all requirements for a minor. Consult with the Head of the English Department and the Head of the Speech Department.

A. **Drill in Essentials of English.** This course is intended to assist students with English deficiencies to qualify themselves for more successful work in college composition. Students whose standings in the Freshman Placement Examination show the need of such assistance are assigned to one of the sections as a prerequisite for English 10. No credit. Fall, M. W. F. 11; Winter, M. W. F. 2. *Hayward and Sorensen*

1. **College Grammar.** Five credits. Fall, Daily 8. Winter, Daily 9. *Vickers*

2. **Mechanics of Writing.** A drill course in the fundamentals of sentence structure, word usage, punctuation, and spelling, with emphasis on correct diction and grammar as aids to precision in writing. Three credits. Fall, M. W. F. 11. Spring, M. W. F. 10. *Rice and Senob*

5. **Scientific Vocabulary.** A study of word formation and derivation as a means of understanding scientific terms and of acquiring a large vocabulary. Three credits. Fall and Spring, M. W. F. 11. *Hendricks*

10. **Sophomore Composition.** Required of all students not offering its equivalent. May not be taken in the Freshman year. This course will stress correctness and effectiveness in sentence, paragraph and theme; give practice in organization and outlining of material, and in expository writings; demand clear, forceful expression, and require a full third of a student's time. Five credits. Eight sections. Time from 8 to 12. *Staff*

No.	Sec.	Credit	Quarter	Time	Instructor
10	1	5	Fall	Daily 8	*Rice*
10	2	5	Fall	Daily 9	*Vickers*
10	3	5	Fall	Daily 11	*Senob*
10	1	5	Winter	Daily 8	*Vickers*
10	2	5	Winter	Daily 9	*Hayward*
10	3	5	Winter	Daily 11	*Senob*
10	1	5	Spring	Daily 9	*Vickers*
10	2	5	Spring	Daily 11	*Sorensen*

11. **Sophomore Composition.** Should be taken in place of English 10 by sophomore students whose record in the placement test indicates special apti-

tude in composition. Open only to students whose placement cards are marked "Eligible for English 11." Five credits.

Fall, Daily 10. Sec. 1. *Hayward*

Winter, Daily 10. Sec. 2. *Hendricks*

17, 18, 19. Freshman English. For Mechanic Arts and Engineering students only. Drill in fundamentals of sentence and paragraph structure. Exercises in grammar, vocabulary, and spelling. Composition, with stress on intelligent thinking and clear expression. Three sections of three credits each per quarter. Fall, Winter, and Spring, M. W. F. 9. *Sorensen, Senob and Rice*

21. Introduction to Poetry. This course aims at an appreciative reading of poetry based on critical standards, to be reached through an understanding of the form of poetry; through a sense of the universal emotions which inspire it and give rise to traditional types; through a perception of what the personality of the poet and the spirit of his time contribute, and finally, through insight into the beauty and intense vitality which are communicated through the combination of these forms, feelings, attitudes, and ideas. Five credits. Spring, Daily 8. *Senob*

22. Contemporary Poetry. A study of the principal British and American poets since 1900. The purpose of the course is to help students to enjoy and understand poetry as a living art. Three credits. Winter, M. W. F. 11. *Hayward*

24. Children's Literature. Introduction to the prose and poetry of childhood and adolescence. A $1.50 library fee is required. This course is helpful to teachers and parents. Four credits. Fall, Winter and Spring, M. T. W. Th. 2. *Pedersen*

25. The Nineteenth Century Novel. Analysis of the novels of Scott, Austen, Thackeray, Cooper, and Hawthorne. Three credits. Fall, M. W. F. 8. *Senob*

31. Floating Poetry. A study of the poetry that has lived in the oral tradition since medieval times. The course is divided into four parts; The narrative ballad, the non-narrative poem, negro poetry (including slave songs and spirituals), and children's poetry. Three credits. Winter, M. W. F. 8. *Hendricks*

33. Short Story. A study of the technique of the short story. English, American, and European stories will be analyzed. Encouragement will be given to those who wish to write. Five credits. Spring, Daily 10. *Rice*

37. The Essay. Writers of the present—American and English. Three credits. Winter, M. W. F. 2. *Rice*

40. World Literature. A survey course including a study of epic and romance, tragedy, comedy, satire, etc., as these forms have appeared in Greek, Roman, Hebrew, Italian, French, German, English and American literature. Five credits. Winter and Spring, Daily 10. *Sorensen*

41, 42, 43. Scandinavian Literature in Translation. Selected readings from recent and traditional writers—short stories, novels, and poetry. One credit each quarter. Fall, Winter, and Spring, M. 1. *Hansen*

46. The Bible as English Literature. The course provides an opportunity for first hand acquaintance with the great book of books. Five credits. Spring, Daily 11. *Vickers*

47. Survey of World Drama (Early Period). A study of selected plays of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence, and Seneca. Attention will be paid to social condition, philosophy, and political history of the times. This is the first in a series of three courses covering the drama from Greek beginnings to the present. Five credits. Fall, Daily 11. *Vickers*

48. Survey of World Drama (Middle Period). A continuation of 47. A study of selected plays from the chief English dramatists from the liturgical period to the nineteenth century; also plays from such continental dramatists as Lope de Vega, Calderon, Corneille, Racine, Moliere, and others. Five credits. Winter, Daily 10. *Rice*

49. Survey of World Drama (Modern Period). A continuation of 48. Study of selected plays by the principal playwrights of the modern era, beginning with Victor Hugo and including Ibsen, O'Neill, Galsworthy, Andreyev, Benavente, Brieux, Gorki, Maeterlinck, Rostand, Wedekind, and others. Five credits. Spring, Daily 9. *Greaves*

52. American Literature. General survey of American prose and poetry from the Colonial period to the present. Five credits. Fall, Daily 8. Winter, Daily 10. *Hayward and Senob*

54. American Biography and Autobiography. Aimed to introduce American Biography and Autobiography both as an enjoyable and important form of literature, and as a source of valuable sidelights on American thought and culture. Two credits. Spring, T. Th. 8. *Hayward*

55. American Novel. A study of the writings of the principal American novelists from Charles Brockden Brown to present. Emphasis will be placed on the novel as a form of art portraying and interpreting the American scene, past and present. Three credits. Spring, M. W. F. 10. *Hayward*

56. American Drama. A study of the development of American drama from Revolutionary times to the present. The principal American plays are studied in the light of the literary and social theories of the times in which they were written. Three credits. (Not given 1942-43.) *Hayward*

59. Emerson. Selected essays, speeches, poems. Two credits. (Not given 1942-43.) *Sorensen*

60. English Literature. A survey of the principal masterpieces of English literature from Beowulf to William Blake. Three credits. Winter, M. W. F. 11. *Sorensen*

61. English Literature. A survey of English masterpieces of the period from Wordsworth to the twentieth century. Three credits. Spring, M. W. F. 8. *Hayward*

63. Shakespeare. The course offers the opportunity to gain a general knowledge of Shakespeare by reading a liberal number of his plays and participating in class discussions upon them. Three credits. Fall, M. W. F. 9. *Pedersen*

85. Shelley. A study of his relation to the Romantic movement. Two credits. Spring, T. Th. 9. *Sorensen*

88. Browning. Chiefly a study of his monologues and selected dramas. Two credits. Fall, T. Th. 2. *Sorensen*

95. Contemporary Novels. A course in the reading and interpretation of the best in twentieth century novels from England, America, France, Germany, and Russia as they mirror the social and literary forces of our times. Three credits. Fall, M. W. F. 10. *Rice*

105. History of the English Language. A study of the evolution of the English language from the Anglo-Saxon times to the present. Three credits. Winter, M. W. F. 2. *Hendricks*

110. Advanced Composition. Required of Upper Division students. The course will emphasize correctness, vocabulary selection, selection and organization of material, clearness, and interest in expository essays. Choice of students considered in assignment of articles to write. Four credits. *Staff*

No.	Sec.	Credit	Quarter	Day and Time	Instructor
110	1	4	Fall	M. T. W. Th. 8	*Hendricks*
110	2	4	Fall	" " 10	*Senob*
110	3	4	Fall	" " 2	*Sorensen*
110	1	4	Winter	" " 8	*Senob*
110	2	4	Winter	" " 11	*Rice*
110	3	4	Winter	" " 2	*Hayward*
110	1	4	Spring	" " 9	*Hayward*
110	2	4	Spring	" " 11	*Senob*
110	3	4	Spring	" " 2	*Rice*

111. Technical Writing. Emphasis will be placed upon bibliography, research methods and final form of technical report. May be taken in lieu of 110. Four credits. Spring, M. T. Th. F. 1. *Hendricks*

118, 119. Creative Writing. Short stories, essays, poetry. Considerable freedom of choice as to type. To register for Winter quarter exclusive of Fall quarter, consult instructor. Three credits each quarter. Fall and Winter, M. W. F. 11. *Pedersen*

Teaching of English. (See Education 123.)

130. Book Reviewing. How to review books; emphasis is placed on literary evaluation and discussion of both fictional and non-fictional books. A course designed for both students and clubwomen. Open to lower division students. Three credits. Spring, M. W. F. 4. *Rice*

147. Comparative Literature. A comparative study of the literature of the 18th century of France and England. Four credits. Fall, M. T. W. Th. 9. *Hendricks*

148. Comparative Literature. A comparative study of the Romantic period in England and Germany. Four credits. Winter, M. T. W. Th. 9. *Hendricks*

149. Comparative Literature. A comparative study of the Romantic period in England and Germany. Four credits. Spring, M. T. W. Th. 9. *Hendricks*

Thomas Mann. (See German 153.)

160. The Literary History of England. This course is designed for English majors and minors. Its purpose is to correlate the reading previously done for various courses in English literature. Five credits. Spring, Daily 8. *Vickers*

161. Medieval Literature. English literature from Beowulf to Wyatt and Surrey exclusive of Chaucer. Emphasis is placed on the epic and the metrical romance. Some continental literature is included. Reading is done in translation. Five credits. (Not given 1942-43.) *Vickers*

162. Chaucer. Relation of Chaucer to his time; his influence upon subsequent literature. Emphasis upon oral reading. Five credits. Winter, Daily 8. *Pedersen*

163. Shakespeare. A study of six plays: Macbeth, Henry IV, King Lear, Hamlet, Othello, Twelfth Night; collateral readings. Five credits. Spring, Daily 9. *Pedersen*

167. Arthurian Legends. A study of Arthurian Legends and their relation to English Literature. Three credits. Fall, M. W. F. 2. *Hendricks*

170. Milton. Selected prose and poetry with special emphasis on Paradise Lost. It is desirable, though not necessary, to have English 46 and 47 before taking this course. Five credits. Winter, daily 10. *Vickers*

175. The Seventeenth Century. Study of the principal works of poets and prose writers exclusive of Milton, from Bacon to Dryden, inclusive. Five credits. (Not given 1942-43.) *Rice*

180. The Eighteenth Century. A comprehensive study of the literature from 1660 to 1798. Five credits. (Not given 1942-43.) *Sorensen*

190. Romantic Period. A brief study of the precursors of romanticism; a study of the literature from 1790-1832, with emphasis on poetry. Five credits. (Not given 1942-43.) *Pedersen*

191. The Victorian Period. A comprehensive review of the literary influences and personalities of the period, with emphasis on the chief poets and prose masters of the age. Five credits. Fall, Daily 10. *Sorensen*

193. Arnold. Studies in the prose of Matthew Arnold, with emphasis on Arnold's contribution to nineteenth century thought. Two credits. (Not given 1942-43.) *Sorensen*

211. Technical Writing. A course in technical writing for students working on a Master's Thesis. Two credits. Time arranged. Fall, Winter, or Spring. *Hendricks*

JOURNALISM

Majors in Journalism should complete English 1, 5, 10, 12, 13, 14, 15, 16, 110, 112, 113, 114, 115, 116, 118 or 119, and 6 hours of literature.

3 or 103. College Journalism. One credit will be allowed each quarter for work done on Student Life under the supervision of the instructor. Students must register for the course to receive credit. One credit each quarter. Maximum, six credits. Any quarter. Time arranged. *Porter*

12. Newspaper Reporting. Lectures, practice, and group discussions on the work of the reporter and correspondent. Students are required to cover assignments for local, state and college newspapers. Three credits. Fall, M. W. F. 11. *Porter*

13. Newspaper Reporting. A continuation of 12 with particular emphasis on newspaper style, ethics, social responsibilities and problems of newspaper reporting. Practical experience on local and state dailies. Three credits. Winter, M. W. F. 11. *Porter*

14. Advanced Newspaper Reporting and Editing. Lectures, class discussions, practical experience in preparing copy for the press, copyreading, proofreading, makeup. Three credits. Spring, M. W. F. 11. *Porter*

15. Community Journalism. Lectures and discussion on problems pertaining to the writing, editing and publishing of a weekly newspaper; news sources, and methods for community correspondents. Consideration will be given to writing farm and home news stories. Three credits. Fall, M. W. F. 8. *Porter*

16. Newspaper Management. Study of operating a weekly, small city daily. Attention will be given to advertising, circulation, promotion, competition, and administration. Newspaper analysis. Three credits. Winter, M. W. F. 8. *Porter*

112. The Writing of Feature Articles. Lectures and practice in preparing feature articles for newspapers and magazines. Analyses of periodicals will be made to determine available markets and what editors buy. Three credits. Winter, M. W. F. 9. *Porter*

113. Publicity Methods. A detailed study of media and methods used to inform the public. Special consideration will be given to public relations work as required by corporations, public institutions, service organizations, governmental agencies. Three credits. Spring, M. W. F. 8. (Not given 1942-43.) *Porter*

114. Writing for Radio. Study and practice in writing informational and interpretative continuity for radio programs. Three credits. Fall, M. W. F. 9. *Porter*

115. Law of the Press. A study of the law of libel, right of privacy, contempt of court, freedom of the press, copyright, postal regulations. Two credits. Spring, T. Th. 11. *Porter*

116. History of Journalism. A study of American newspaper men and what they have contributed to Journalism; also, modern newspaper trends. Three credits. Winter, M. W. F. 8. (Not given 1942-43.) *Porter*

Geology

J. STEWART WILLIAMS, *Professor;* HARRY VICTOR CHURCH, JR., *Instructor;* JAMES SEARLE YOLTON, *Assistant.*

Geology Club: The Geology Club, an organization of geology students under the supervision of the Department of Geology meets in the lecture room of the department at 8:00 p. m. on the second Thursday of each month. The programs consist of talks by guests, faculty members, and students. All interested persons are invited to attend. Regular attendance is required of all geology majors.

Major in Geology: The following courses, or their equivalents, outside the Department of Geology, are required of Geology majors: Chem. 3, 4, and 5; C. E. 81, 82, and 83; English 110 and 111; Physics 20, 21, and 22; Math. 34, 35, and 46. The following courses in the department, are required of majors: 1 or 3, and 2; 101, 102, 106 or 108, 110, 112 or 113, 114, 115, and 120.

Field Trips: Since field work is a very essential part of the study of Geology, majors should be prepared to devote most of the Saturdays during the Fall and Spring quarters to this work. Two longer field trips, each of several days' duration, are taken each year, one in the Fall quarter and one in the Spring quarter. Majors should plan to take as many of these trips as possible, and attendance on the majority of the trips is required for a major.

1. Introductory Physical Geology. A general survey course of the whole field of physical geology for arts students and others who desire only a broad introduction to the subject. This course is continued in Geology 2, for which it is a prerequisite. Closed to students who have had Geology 3 or equivalent. A one-day field trip is required in Fall and Spring quarters. Five credits. Fall, Daily 8 or 10. Winter, Daily 9 or 11. Spring, Daily 8. *Williams or Church*

2. Introductory Historical Geology. A continuation of Geology 1 covering the field of historical geology. A one-day field trip required Spring quarter. Prerequisite, Geology 1. Five credits. Winter, Daily 8. Spring, Daily 11. *Williams*

3. Physical Geology. This course is designed for forestry, engineering and soils students and others who desire a substantial introduction to physical geology. Not open to students who have taken Geology 1 or equivalent. A one-day field trip required Fall and Spring quarters. Five credits. Fall, M. T. W. Th. 9; Lab., M. or W. 2-5; or M. T. W. Th. 2; Lab., M. or W. 8-11. Winter, M. T. W. Th. 11; Lab., T. or Th. 2-5. Spring, M. T. W. Th. 9; Lab., M. or W. 2-5; M. T. W. Th. 10; Lab., T. or Th. 2-5 (for engineers). *Williams or Church*

101. Mineralogy. A study of the common minerals and their occurrence. Identification of minerals by means of their physical properties and simple chemical tests. Elementary crystallography and its application to mineralogy. Methods of blowpipe analysis and their use in rapid testing of minerals and metallurgical products. Prerequisites, Geol. 3 and Chem. 3, 4, and 5. Five credits. Fall, M. W. F. 10; Lab., T. Th. 2-5. (Not given 1942-43.) *Church*

102. Rocks and Rock-forming Minerals. Occurrence, properties, and identification of rock-forming minerals, especially the silicates. Study of various types of rocks, their origin, classification and recognition. Prerequisite, Geol. 101. Five credits. Winter, M. W. F. 10; Lab., T. Th. 2-5. (Not given 1942-43.) *Church*

103. Engineering Geology. The application of geology to engineering problems. A course for senior engineers. Three credits. Spring, T. Th. 11; Lab., F. 2-5. *Church*

106. Invertebrate Paleontology. An introduction to the study of fossils. A living example of each of the groups of animals with important fossil representatives will be used as an introduction to the fossil forms of that group. Methods of preparation and study will be developed from work upon material collected by the student himself. Prerequisite, Geol. 2 or Zoo. 1. Five credits. Winter, T. Th. 10; Lab., M. W. F. 2-5. *Williams*

108. Stratigraphy. An introduction to the processes by which the sedimentary rocks have been formed, and to their original structures, followed by a study of the stratigraphic systems and their identification by guide fossils. Field trips required. Prerequisites, Geol. 3 and Geol. 106. Five credits. Spring, M. W. F. 9; Lab., M. 2-5 and alternate Saturdays 8-5. *Williams*

110. Structural Geology. Rock structures and their formation, including mountain building processes. Emphasis will be placed on the recognition and interpretation of folded and faulted structures in the field. Written reports and field trips required. Prerequisite, Geol. 3. Five credits. (Not given 1942-43.) *Church*

112. Economic Geology—Nonmetals. A study of geological occurrence, origin, and distribution of coal, petroleum and natural gas, building materials and other nonmetallic minerals. Commercial requirements, preparation, and marketing of these substances will also be considered. Prerequisite, Geol. 101. Five credits. Fall, M. W. F. 10; Lab., T. Th. 2-5. *Church*

113. Economic Geology—Metals. A study of geologic occurrence, origin, and distribution of the various metallic ores. Processes of secondary enrichment and their results on various types of ore deposits. Prerequisite, Geol. 101. Five credits. Winter, M. W. F. 10; Lab., T. Th. 2-5. *Church*

114. Field Methods. Field practice in measurement of the attitude and thickness of formations, field use of topographic maps, and note taking. Mapping by pacing and compass, and by plane table. Prerequisites, Geol. 3, C. E. 81 and 82. Five credits. (Not given 1942-43.) *Williams*

115. Advanced Physical Geology. A study of those phases of geology that are of particular interest to students of conservation in the Western States. Processes of erosion, action and development of streams, land forms, subsurface water, etc. Prerequisites, Geol. 3 and College Mathematics, Chemistry and Physics. Five credits. Fall, M. T. W. Th. 11; Field Study F. 2-5. *Williams*

16 or 116. Special Problems. Direction in the study of special problems in which a student has become interested, and upon which he desires to make written reports. From one to six credits, not to exceed two in any quarter. Time arranged. *Williams or Church*

120 or 220. Thesis. Senior College or graduate thesis. A thesis on some field problem is required of majors and five credits are given for its completion. Registration for this undergraduate thesis is limited to the Fall or Spring quarter. It must be for five hours and the thesis must be completed in one quarter.

Registration for the graduate thesis may be for one, two or three quarters, and nine to fifteen credits are given for its completion.

Williams or Church

230. Graduate Seminar. Two to five credits. Any quarter. Time arranged. *Williams and Church*

History

JOEL E. RICKS, *Professor;* JOHN DUNCAN BRITE, *Associate Professor.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students majoring in the Department of History should include the following classes in the major: History 13, 14, 17, 34, 111, 124, 126, 128, 135, 171A. Students majoring in history should consult the head of the department for registration.

History majors intending to pursue graduate work should complete two years of French or German.

4. World Civilization. Survey of the civilizations of the world from ancient times to the sixteenth century. This course is planned to meet the needs of students who wish to understand the main currents in world development and who do not have time for a more detailed course. Attention will be given to the life principal contributions, and significance of past civilizations. Five credits. Fall, Daily 11. Spring, Daily 11. *Brite*

7. Modern European History. A course for those who desire to understand modern Europe since the French Revolution and the overthrow of Napoleon in 1815. The forces of nationalism, industrialism, and economic imperialism leading to world conflict in 1914 and to the peace settlement of 1919 will be stressed. Five credits. Winter, Daily 10. *Brite*

8. Recent European History. This course will emphasize the present war, its historical backgrounds in the war of 1914, and the history of Europe from 1919 to the present. Three credits. Fall, T. and Th. at 8, with one hour arranged; Winter, M. W. F. 8; Spring, M. W. F. 10. *Brite*

14. United States History. Survey of United States History from 1789 to 1865. Five credits. Fall, Daily 9. *Ricks*

17. United States History. The development of American Democracy. This course indicates the beginnings of American democracy including the influence of the frontier upon American ideals and practices and the development of democratic institutions. The main emphasis, however, will be upon the social and economic changes since the Civil War and their influence upon the political life and foreign policy. Recent problems will be stressed. This course is especially designed for students who have had no other college courses in history. Five credits, Fall, Daily 9; Winter, Daily 9; Spring, Daily 9. *Ricks and Brite*

21. Hispanic American History. This course is planned to meet the needs of students who desire to understand the main developments in America south of the United States. A brief survey of the beginnings and colonial development of Spanish and Portuguese America will be followed by a more detailed study of the revolutions, establishment of republics, the culture and international relations of the Hispanic American nations, and will include the Monroe Doctrine and Pan-American proposals. Five credits. Fall, Daily 10; Spring, Daily 10. *Ricks*

22. History of the Pacific Area. This course will emphasize the present war in the Pacific and its historical backgrounds in the American advance in the Pacific, the rise of Japan, the partition of China, the modern movements in China and the Japanese invasion of Manchuria and China. The causes and course of the present war in the Pacific will be analyzed. Three credits. Fall, M. W. F. 8; Winter, T. Th. 8, one hour to be arranged; Spring, M. W. F. 8. *Ricks*

34. English History. A survey of English History from the earliest times to the present day, with emphasis upon the period of the Tudor and Stuart kings. Five credits. Spring, Daily 8. *Brite*

106. Roman History. From the beginnings of the Roman Republic to the decline and fall of the Empire in the Fifth Century A. D. Three credits. Spring, T. Th. 10, and one hour to be arranged. *Brite*

124. European History. Renaissance and Reformation. Study of the Renaissance in all western European countries in the thirteenth, fourteenth, fifteenth, and sixteenth centuries. Protestant Revolution and Catholic Reformation movements in Western Europe. Five credits. Winter, Daily 11. *Brite*

126. European History. The French Revolution and Napoleon. Three credits. Fall, M. W. F. 10. *Brite*

128. European History. Twentieth Century World. Three credits. Spring, T. Th. 11, one hour to be arranged. *Ricks*

135. United States History. History of the Far West. This course will deal with the region from the Rockies to the Pacific Coast with special emphasis upon the Intermountain West. Five credits. Winter, Daily 10. *Ricks*

171A. United States History. Constitutional History of the United States to 1826. Three credits. Fall, T. Th. 11, one hour to be arranged. *Ricks*

Mathematics

V. H. TINGEY, *Associate Professor;* MARION T. BIRD, S. R. EGBERT, *Assistant Professors;* RALPH L. CALVERT, NEVILLE C. HUNSAKER, *Instructors.*

See pages 53 and 54 for courses that may satisfy group requirements.

Two types of majors are offered in the mathematics department. Those intending to do graduate work in mathematics take the regular major. Those intending to teach in high school take the regular major or the teaching major.

Regular major: Mathematics 33, 34, 35, 46, 60, 97, 98, 99, 119, 120, 122, 130, 131, 152. Students that may have had the equivalent of any of the above courses will not be required to take the course. Physics 20, 21, 22, and 12 additional hours of physics or chemistry of senior college grade, chemistry 3, 4, 5 and a reading knowledge of French or German is recommended.

Teaching majors: Must meet the requirements of the state board of education for certification in the purely educational subjects and also have mathematics 33, 34, 35, 46, 97, 98, 99, 111, 119, 120, 122, 130, 131. Physics 20, 21, 22 and chemistry 3, 4, and 5. Also 9 additional hours of physics and chemistry of senior college grade.

One year of high school algebra and one year of Plane Geometry are prerequisite to all courses in college mathematics.

33. Solid Geometry. 3 credits. Winter and Spring, M. W. F. 1.

34. Algebra. For students who present but one year of high school agrebra for entrance. Students presenting more than one year of high school algebra for entrance will not be allowed credit for math. 34. Three credits. Fall, M. W. F. 8, 9, 10, 11, 2; T. Th. 9. Winter, M. W. F. 8, T. Th. S. 8; Spring, M. W. F. 8. *Staff*

35. College Algebra. Required for all higher work in mathematics, physics, and chemistry, bacteriology and engineering. Five credits. Fall, Daily 11; Winter 8, 9, 10, 11, 2; Spring 8, 10. *Staff*

46. Plane and Spherical Trigonometry. Math. 35 prerequisite. Five credits. Fall, Daily 10; Winter, Daily 11; Spring, Daily 8, 9, 10, 11. *Bird*

50. Astronomy. An elementary non-mathematical course. Three credits. Spring, M. W. F. 9. *Calvert*

60. Mathematics of Finance and Life Insurance. Three credits. Spring, M. W. F. 11. *Bird*

97. Plane and Solid Analytical Geometry. Five credits. Fall, Daily 9; Spring, Daily 11. *Bird and Calvert*

98. Differential Calculus. Five credits. Fall, Daily 9; Winter, Daily 9. *Tingey and Bird*

99. Integral Calculus. Five credits. Winter, Daily 9; Spring, Daily 9. *Tingey and Bird*

110. Statistics for Students in Agriculture. Three credits. Fall, M. W. F. 8. *Tingey*

111. Statistics. Prerequisite, math. 35. This is a foundation course in statistics. Not open to lower division students. Five credits. Winter or Spring, 8; Lab., 2-5. *Bird and Tingey*

119. Modern Algebra and the Theory of Equations. Three credits. Winter, M. W. F. 1. *Tingey*

120. Modern Geometry and Higher Plane Curves. Three credits. Fall, M. W. F. 2. *Calvert*

122. Ordinary Differential Equations. Three credits. Spring, T. Th. 9, Wed. 12. *Tingey*

130. Advanced Calculus. Three credits. Fall, arranged. *Hunsaker*

131. Advanced Calculus. Three credits. Winter, arranged. *Hunsaker*

152. Partial Differential Equations. Three credits. Spring, arranged. *Hunsaker*

Modern Languages and Latin

GEORGE A. MEYER, *Professor;* GEORGE C. JENSEN, *Associate Professor;* THELMA FOGELBERG, MARION L. NIELSEN, *Assistant Professors.*

The Department offers courses in French, German, Portuguese, Spanish, and Latin. The work is organized so as to permit the pursuing of language study according to either of two general aims:

1. The study of foreign language for its literary and cultural values.
2. The gaining of a ready ability to read and analyze scientific prose in a foreign language.

Consultation with members of the staff before registration will help students to make proper choice of course.

See pages 53 and 54 for courses that may satisfy group requirements.

By faculty ruling, no credit in a beginning language course may be given until work of the third quarter has been completed.

Students are advised to begin their language study in freshman or sophomore years. One of the great values of such study is its help in clarifying the student's knowledge and use of English. In Senior College it is increasingly difficult to fit 5 hours of beginning language into a schedule.

It is particularly important that prospective science majors, and those who contemplate doing graduate work for advanced degrees, should begin their Modern Language studies early in their school career.

Major in a Modern Language:

French. The following courses are required: 1, 2, 3, 101, 102, 103, 104, and 12 hours from courses numbered above 104.

German. Forty-five hours of credit including 1b, 2b, 3b, 101, 102, 103, and 15 hours from courses numbered above 103.

MODERN LANGUAGES

21. French Pronunciation. Designed primarily for students in Music, Art, Speech and Radio Announcing. Available to others. Basic drill on pronunciation of French with special attention to the terminology and proper names encountered in the fields of music and art. Two credits. Winter, M. Th. 3. *Meyer*

22. Italian Pronunciation. Same as for course 21. Two credits. Fall, M. Th. 3. *Jensen*

23. German and Spanish Pronunciation. Same as for course 21. Two credits. Spring, M. Th. 3. *Jensen*

FRENCH

1, 2, 3. First-Year French. Regular beginner's course. Grammar, reading, pronunciation, and dictation. Five credits each quarter. Fall, Winter, and Spring. Daily 9. *Meyer*

101, 102. Second-Year French. Reading, grammar review, intensive study of the language, with emphasis on oral work and phonetics. Five credits. Fall and Winter. Daily 10. *Meyer*

101c, 102c, 103c. Second-Year French. Reading of modern French prose, grammar review, idiom and vocabulary study. Designed to give the student a thorough preparation for reading and translation. Recommended for science majors. Three credits each quarter. M. W. F. 9. *Fogelberg*

103. Reading in 19th Century Literature. A Continuation of 102. Rostand, Merimee, Anatole France. Four credits. Spring, M. T. W. F. 10. *Meyer*

104. French Phonetics. Principles of French pronunciation and their practical application. Drill in class and privately with the aid of phonograph records. Prerequisite, 103. Three credits. Fall, M. W. F. 2. *Meyer*

105. French Composition and Conversation. Three credits. Winter, M. W. F. 2. *Meyer*

106. French Short Story. A study of the French Conte as a literary form from the earliest times. The course will serve as an introduction to literary movements in France. Special emphasis on the 19th Century. Three credits. Spring, M. W. F. 2. *Meyer*

107, 108, 109. Scientific French. Readings in special fields of French Scientific Literature. Time and credit arranged. Fall, Winter, Spring. *Meyer*

120. The Comedies of Moliere. A study of Moliere's plays as social criticism. Two credits. Fall, T. Th. 2. *Meyer*

121. French Classic Drama. A study of the plays of Corneille and Racine. Two credits. Winter, T. Th. 2. *Meyer*

122. Nineteenth Century French Drama. Study of the Romantic and Realistic Schools. Two credits. Spring, T. Th. 2. *Fogelberg*

129, 130. French Literature of the 18th Century. Special emphasis on the philosophy of the period—Voltaire, Rousseau, Buffon, Diderot. Two credits each quarter. Fall and Winter. Time arranged. *Staff*

131. The Comedies of Beaumarchais and Marivaux. Two credits. Spring. Time arranged. *Staff*

135, 136, 137. Nineteenth Century French Novel. Two credits. Fall, Winter, and Spring. Time arranged. *Fogelberg*

GERMAN

Returned missionaries are advised to complete a major or at least a minor in German.

Before registering for Beginning German, students should read carefully the descriptions of 1, 2, and 3.

1, 2, 3. First-Year German. Regular beginner's course. Grammar, reading, pronunciation and dictation. Five credits each quarter. Fall, Winter, and Spring. Two sections. Daily 9 and 2. *Jensen and Nielsen*

101, 102, 103. Second-Year German. Grammar review. Emphasis placed on conversation and composition based upon literature, history, and culture. Five credits each quarter. Prerequisite, 3. Daily 8. *Jensen*

101c, 102c, 103c. Second-Year German. Science majors only. A continuation of German 3c. Vocabulary building and reading of Scientific texts. Three credits per quarter. Fall, Winter, and Spring. M. W. F. 1. *Nielsen*

104, 105, 106. Scientific German. Open to students who have had second-year German and to others by special permission. Reading of scientific texts. Credits arranged. Time arranged. Fall, Winter, and Spring. *Nielsen*

120. Die Deutsche Novelle Im 19. Jahrhundert. The reading and discussion of representative stories by Hauff, Storm, Heyse, Meyer, Keller, and others. Three credits. Winter, M. W. F. 11. *Nielsen*

121. Lessing. Plays and Biography. Prerequisite, two years of college German or an equivalent. Two credits. (Not given 1942-43.) *Staff*

122. Schiller. Plays and Biography. Prerequisite, two years of college German, or an equivalent. Two credits. Fall. T. Th. 11. *Nielsen*

123. Die Deutsche Novelle Im 20. Jahrhundert. Representative stories by Thomas Mann, Heinrich Mann, Schnitzler, Ernst and many others. Three credits. Spring. M. W. F. 11. *Jensen*

130. Goethe's Faust. Especially recommended for literary students and returned missionaries. Prerequisite, two years of college German. Three credits. Fall, M. W. F. 11. *Jensen*

131. Goethe's Prosa. Goetz, Werther, Dichtung and Wahrheit, and selections from Welhelm Meister. Reading of a biography of Goethe. Three credits. (Not given 1942-43.) *Jensen*

132. Heines Prosa und Lyrik. Three credits. Winter, M. W. F. 11. *Jensen*

133. German Drama of the Nineteenth Century. Rapid reading and discussion of representative plays from Kleist to Hauptmann. Three credits. (Not given 1942-43.) *Nielsen*

150. Schnitzler's Stories and Plays. Prerequisite, German 103, or an equivalent. Two credits. (Not given 1942-43.) *Jensen*

151. Hauptmann's Plays and Novels. Prerequisite, German 103 or an equivalent. Two credits. (Not given 1942-43.) *Nielsen*

152. Sudermann. Rapid reading and discussion of selected novels, novellen, and dramas. Prerequisite, German 103, or an equivalent. Two credits. (Not given 1942-43.) *Jensen*

153. Thomas Mann. Novels, Novellen, and Essays. His life and philosophy receive consideration. The course will be conducted in English. Either German or English credit will be given. Three credits. (Not given 1942-43.) *Nielsen*

SPANISH

1, 2, 3. First-Year Spanish. Grammar, conversation, and reading. Study of the history, literature, and culture of the Spanish people. Five credits. Fall, Winter, and Spring. Daily, 10. *Fogelberg*

101, 102, 103. Second-Year Spanish. Grammar review, reading conversation, and composition. Three credits. Fall, Winter, and Spring. M. W. F. 9. *Fogelberg*

105, 106, 107. Spanish Composition and Conversation. Fall, Winter, and Spring. Two credits. T. Th. 11. *Fogelberg*

110. Directed Reading. Readings in modern Spanish literature. Time and credit arranged. *Fogelberg*

PORTUGUESE

1, 2, 3. First-Year Portuguese. Grammar, dictation, conversation and reading. Study of the history and culture of Brazil and Portugal. Five credits. Fall, Winter, Spring. Daily 2. *Meyer*

LATIN

1, 2, 3. First-Year Latin. An introductory course with special emphasis on the relation of Latin to English. Study of vocabulary and word-formation as an aid to better comprehension of our own tongue. Especialy recommended for English majors and for pre-law and pre-medical students. The course includes readings from Caesar and various other Latin writers. Five credits each quarter. Fall, Winter, and Spring. Daily 10. *Nielsen*

101, 102, 103. Virgil and Cicero. Selected readings from the orations of Cicero and Virgil's Aeneid. Also miscellaneous readings from Pliny, Catullus, Ovid and other Roman authors. During the year there will also be readings in English in the history of Roman Literature. This course is open to all students who have had one year of college Latin or two years of high school Latin. Three credits each quarter. Fall, Winter, and Spring. Time arranged. *Nielsen*

Physics

LEON B. LINFORD,* WILLARD GARDNER, *Professors;* PHILIP J. HART, *Assistant Professor;* JAY O. JENSEN, *Instructor.*

Mathematics 34 or equivalent must precede or parallel Physics 6, 7, 20, 21, or 22, whichever is taken first.

See pages 53 and 54 for courses that may satisfy group requirements.

Calculus and Physics 20, 21, 22 are prerequisite for all courses numbered above 100.

*On leave.

Suggested courses. The course taken will depend on whether the student wishes to continue with graduate work in Physics or whether he desires to teach in high school. Substitutions or changes must be approved by the head of the department. For each year, the first group of courses should be taken by all majors. Those courses preceded by (**) are for students preparing to do graduate work; and, preceded by (†), are for prospective high school teacher. A minimum of 30 senior college credits in Physics must be obtained.

Freshman Year: Physics 20, 21, 22; Math. 34, 35, 46; Bacteriology 1; Economics 51; **(5 hours Social Science); †(Sociology 70).

Sophomore Year: Math. 97, 98, 99; Chem. 3, 4, 5; **(German 1a, 2a, 3a); †(Physiology 4; English 10; Psychology 3).

Junior Year: Physics 120, 121, 130 Math. 120, 121, 122; **(German 101, 102, 103, or French 1a, 2a, 3a; English 110; 5 hours Biological Science; 5 hours elective); †(Physiology 108; Psychology 102) Education 111, 112, 114; Speech 1; English 110).

Senior Year: Physics 145, 153, 154, one other year course in Physics; **(Math. 150, 151, 152; Chem. 104, 105, 106; Physics 108, 193, 194, 195; English 110); †(Chem. 121; Education 127, 128, 129 [Winter and Spring] 5 hours Language group Electives 3-8 hours).

A Teaching Minor in Physics will be approved only for students majoring in closely related fields. Such students must complete Physics 20, 21, 22, 120, 121, 130.

3. Introductory Physics. (Credit in this course will not be allowed students who have previous college credit in Physics.) An essentially non-mathematical lecture demonstration course designed for students not majoring in the Sciences, Engineering, Agriculture, or Forestry. Students who have had high school Physics should elect Physics 6 or 7. Five credits. Any quarter. Daily 10. *Jensen*

6, 7. General Physics. Physics 6 covers mechanics, constitution of matter, heat, and meteorology. Physics 7 includes primarily electricity and magnetism, with a survey of the fields of light and sound. Primarily designed for students in Forestry and Agriculture. Five credits.

Physics 6—Fall or Winter. Physics 7—Spring. Lect., M. T. W. F. 11; Quiz section, Th. 11; Lab., (One of the following periods) M. or T. 8-10, or W. Th. or F. 3-5. *Jensen*

16. Meteorology. (Physics of the Atmosphere). A study of the weather, its observation, and prediction. Prerequisite, college work in Physics covering the subject of heat. Three credits. Fall, M. W. F. 8. *Jensen*

20, 21, 22. Mechanics and Molecular Physics. Electricity and Magnetism. Heat, Light, and Sound. A course designed for Science majors, Engineers, and students preparing for Medicine. Recommended for majors in Agriculture who intend to do graduate work. Prerequisite, high school Physics and a working knowledge of trigonometry. Students not majoring in Physics should take this in the sophomore year. Five credits.

Sec. 1. Given in order 20, 21, 22. Lect., M. W. F. 8; Lab., M. W. 10-12, 1-3, or 3-5, or T. Th. 3-5. Quiz sections T. Th. 8, or F. 10-12, or 2-4. *Hart*

Sec. 2. Given in order 21, 22, 20. Lect., M. W. F. 9; Lab., M. W. 10-12, 1-3, or 3-5, or T. Th. 3-5. Quiz sections T. Th. 9 or F. 2-4. *Hart*

Calculus and Physics 20, 21, 22 are prerequisite for all courses numbered above 100.

Physical Chemistry. See Chemistry 104, 105, 106. Prerequisites, the above and Chemistry 5. For Laboratory to accompany this course, see Chemistry 109, 110, 111.

At the beginning of each quarter, the schedule of the following Advanced Physics courses will be arranged to meet the requirements of all registered students.

108. Advanced Laboratory Work. Recommended for students majoring in Physics. Can be taken only by special arrangement. Any quarter. Time and credit arranged. *Staff*

114. Soil Physics. The fundamental laws of physics will be reviewed, with emphasis on mechanics and thermodynamics and their relation to soil problems. Some time will be devoted to significant features of modern physics with particular reference to the theory of surface forces as they influence the behaviour of soil colloids. Special attention will be given to the dynamics of soil moisture. A knowledge of elementary physics and mathematics will be essential as well as a good foundation in soils. Three credits. Winter, M. W. F. 8. *Gardner*

120, 121. Modern Physics. (Recommended for Juniors.) A study of electrons, ions, atomic structure, and radiation. Three credits each quarter. Fall and Winter. Time arranged. *Hart*

130. Nuclear Physics. (To follow Physics 121.) A brief survey of methods and results of recent investigations of nuclear processes. Three credits. Spring. Time arranged. *Hart*

145. Vector Analysis. An introduction to vector algebra and its applications. Three credits. Fall, M. W. F. 9. *Gardner*

153, 154. Analytical Mechanics. (To follow Physics 145.) Three credits each quarter. Winter and Spring, M. W. F. 9. *Gardner*

160. Heat. The nature, transmission, effects, and theories of heat and a short introduction to thermodynamics. Three credits. Spring. Time arranged. *Gardner*

166, 167. Geometrical and Physical Optics. Three credits each quarter. Fall and Winter. Time arranged. *Gardner*

175, 176, 177. Electricity and Magnetism. A study of Electrostatics, Magnetostatics, D.C. and A.C. circuits, Electromagnetism, and Electromagnetic Theory. Three credits each quarter. Fall, Winter, and Spring. Time arranged. (Not given 1942-43.) *Hart*

190, 191, 192, (290, 291, 292). Theoretical Physics. Two or more credits each quarter. Fall, Winter, and Spring. Time arranged. *Gardner*

193, 194, 195, (293, 294, 295). Seminar in Physics. A weekly meeting of staff and Physics majors, consisting of reports on recent developments in Physics. Students may register and receive credit for course by making reports. One credit each quarter. Fall, Winter, and Spring. Time arranged. *Staff*

250. Research in Physics. Time and credit to be arranged before registration. Any quarter. *Staff*

Upon sufficient demand, courses numbered 120-180 will be extended to cover more advanced work. Numbers will follow in consecutive order. Graduate credit may be given for certain extended courses taken by graduate students upon completion of extra work. In such cases the number will be the corresponding "200" number.

Physiology, Public Health and Hygiene

E. G. CARTER, W. B. PRESTON, C. L. ANDERSON, *Professors;*
WILLIAM SCHOLES, *Instructor;* ANN BURNS, *Assistant.*

See pages 53 and 54 for courses that may satisfy group requirements.

The minimum number of credits in Physiology, Public Health, and Hygiene required for a major is 30. In addition, students planning to major in this department are expected to take Bacteriology 1, 2, Organic Chemistry and Mathematics. Courses in Nutrition, Physics, Psychology, Recreation, Sociology, and Zoology are among the supporting courses most strongly recommended for majors in Physiology and Public Health.

4. Anatomy and Physiology. A study of the structure and functions of the human body. This course is prerequisite for certain Upper Division courses in Physiology and Health. Five credits. Fall, Daily 8, 9, 10, 2. Winter, Daily 8, 10, 11. Spring, Daily 8, 9, 10. *Staff*

4a. Anatomy and Physiology. A continuation of course 4 with laboratory exercises twice per week. Primarily for nurses. Five credits. Winter, Daily 10. *Scholes*

5. Physiology Experiments. A course of laboratory exercises and demonstrations selected to illustrate the fundamental principles of Physiology and Hygiene. Should be accompanied by or be preceded by Anatomy and Physiology 4. One credit. Any quarter, M. T. W. Th. or F. 2-5. *Scholes*

14. Health Education. An informational course dealing with the basic physiological factors in hygiene and health education, and opening up the fields of health promotion and disease prevention. Three credits. Fall, M. W. F. 9, 11. Winter, M. W. F. 10. Spring, M. W. F. 8, 11. *Staff*

***50. First Aid.** The standard American National Red Cross Course in first aid with emphasis upon the practical use of the knowledge as applied to every day life in various occupations. Detailed demonstrations and practice. The American Red Cross First Aid Certificate may be obtained by students in the course who pass a satisfactory examination. Three credits. Winter, M. W. F. 11. *Preston*

100. Physical Growth and Development. A study of the physical and physiological aspects of child development, including the growth of the human body and its systems from early fetal life to maturity. Three credits. Spring, M. W. F. 10. *Staff*

104. Mechanical Anatomical Analysis of Activity. A study of articulations and muscles with emphasis on movements and actions. The skeleton, manikin, and man himself will afford the laboratory material. Three credits. Spring, M. W. F. 9. *Anderson*

106. Physiology of Activity. Changes in important organ systems in relation to muscular activity are treated in this course. Prerequisite, Physiology 4. Four credits. Fall, M. T. W. F. 8. *Carter*

108. Personal Hygiene, School Health and Safety. (May be used for certification.) This course is designed to acquaint the student with the modern principles of hygiene. The several approaches to positive health, health in the school, and safety education will be developed. As preparation for this course one or more of the following are recommended: Anatomy and Physiology, Bacteriology, Vertebrate Zoology. Five credits. Fall, Daily 10; Winter, Daily 9, 2; Spring, Daily 11. *Carter and Anderson*

109. Community Health. A study of the organization of municipal, county, state, and federal health agencies, with an analysis of their functions in the

*Does not satisfy Biological Science group requirement.

fields of maternal, infant, preschool, school, and adult hygiene, and preventive medicine in the light of modern social needs and present trends. As preparation for this course the following are recommended: Personal Hygiene, Bacteriology, Sociology. Three credits. Spring, M. W. F. 8. *Scholes*

110. Physiology. A lecture and discussion course dealing with present status and recent advances in the physiology of glands of internal secretion. Prerequisite, Physiology 4. Two credits. Spring, T. Th. 8. *Carter*

111. Physiology. The nervous system and sense organs will be treated in this course. Lectures and demonstrations. Prerequisites, Physiology 4 or Zoo. 1. Three credits. Fall, M. W. F. 11. *Carter*

112. Alimentary Mechanisms. The physiology of the alimentary canal, of the secretory processes, digestive mechanics, absorption, excretion and metabolism. Prerequisites, Physiology 4 and Chem. 12 or 122. Two credits. Winter, T. Th. 10. *Carter*

114. School Health Programs. Designed to meet the practical problems of health education in the public schools. It will include a study of curricula and methods of teaching health for both elementary and secondary schools. Three credits. Winter, M. W. F. 9. Spring, M. W. F. 11. *Anderson*

115, 116, 117. Journal Club. A study of current physiological literature including hygiene, with oral and written reports. Prerequisite, Physiology 4 or 108. One credit each quarter. Fall, Winter, and Spring. Time arranged. *Carter*

145. Mental Hygiene. This course deals fundamentally with the conservation of mental health in its various aspects. The development and the appraisal of personality with special reference to individual and guidance problems are duly considered. Personality abnormalities and abberations are considered in order that the normal may be more fully appreciated and understood. Three credits. Fall, T. Th. 11, M. 1. Winter, M. W. F. 11. *Anderson*

150. Physiology Laboratory. Recommended for majors and minors in Physiology and students in Foods and Nutrition. Graduate credit allowed. Any quarter. Time and credit arranged. *Carter and Scholes*

180. Advanced Physiological Hygiene. Prerequisites, Public Health and Hygiene 108 and Physiology 106 or 110. Three credits. Spring, T. Th. 9, M. 1. *Anderson*

191. Interpretation of Health Examination. A study of the techniques, meanings, and purposes of the health examination. Three credits. Spring, M. W. F. 11. *Preston*

195. (295). Public Health Seminar. Two credits. Spring, M. 3-5. *Anderson and Scholes*

Speech

CHESTER J. MYERS, *Associate Professor;* HALBERT GREAVES, FLOYD T. MORGAN, JOHN M. HADLEY, *Assistant Professors;* RUTH MOENCH BELL, *Instructor.*

Before a student may begin Upper Division work with a view to majoring in Speech, he must have completed with a "B" average any necessary prerequisite Lower Division courses; must have completed all requirements of the Lower Division groups; must have passed an examination preparatory for his major work. Majors must maintain a "B" average in Speech courses.

It is recommended that all Speech Majors take Speech 1 and 2 as part of their Language and Arts group requirements. Any person who intends to major in Speech must take Speech 6 no later than his junior year, preferably not later than his sophomore year. In addition, fifty hours of Speech are to

be completed for the major. For prospective teachers, the distribution of these hours is to be as follows: Courses in Public Speaking, 10 hours (Speech 25 or 109 required of all majors); Courses in Interpretation, 10 hours (Speech 104 required of all majors); Courses in Pathology, 5 hours; Courses in Dramatic Literature, 5 hours; Courses in Play Production, 10 hours; Elective Courses in Speech, 10 hours. Students who do not intend to teach may apply for permission to substitute courses in their special fields of interest for some of those in this outline. A special major for students whose main interest is Speech Correction may be outlined by consultation with Dr. Hadley.

All Speech Minors are advised to complete Speech 1 and 2 as part of their Language and Arts group requirements, and must take Speech 6 no later than their junior year. In addition, the minor must include courses in Public Speaking, 5 hours; Courses in Interpretation, 5 hours; Courses in Play Production, 5 hours; Elective Courses in Speech, 3 to 5 hours.

Speech 123 is recommended for those who are planning to teach Speech.

Composite English-Speech Major. Students whose major interests are divided between English and Speech may take a composite English-Speech major. Such a major relieves the student of all requirements for a minor. This combination is recommended highly. Consult with the Head of the English Department and the Head of the Speech Department.

1. Fundamentals of Speech. Foundational elementary Speech training. Includes training and application in common daily speech and speaking situations, voice improvement, and clear, distinct utterance. Clinic assistance available to the students of this course who need it. Time for clinical assistance to be arranged. Five credits. Fall, Daily 9, 10, 11. Winter, Daily 8, 9, 2. Spring, Daily 8, 9, 10. *Staff*

2. Principles of Reading. The principles of effective oral and silent reading. Considerable emphasis placed on oral delivery of literary selections. A preparatory course for understanding and appreciation of the printed page. Practice material includes not only standard literature, but also everyday reading matter. Five credits. Fall, Daily 8. Winter, Daily 10. Spring, Daily 8. *Bell*

5. Extempore Speech. Designed to meet the specific needs of professional groups in the practice of their profession. Basic principles of effective speaking, with emphasis on composition and delivery of the forms of address of greatest interest to those for whom the course is provided. Winter and Spring sections reserved for students in the School of Forestry. Other students must receive consent of instructor before registering. Three credits. Fall, M. W. F. or T. Th. F. 10. Winter, M. W. F. or T. Th. F. 9. Spring, M. W. F. 9. *Morgan and Bell*

6. Introduction to the Field of Speech. A course designed to acquaint the prospective Speech major with the scope of the field of speech and dramatic art. Students who intend to major in speech must take this course not later than the junior year, and should take it their sophomore year. One credit. Winter, W. 1. *Greaves and Staff*

7. Basic Principles of Voice Technique. A training course, adapted to individual needs and abilities. Exercises for flexibility of voice, articulation, and pronunciation. Recommended for all Speech majors and minors, for prospective teachers, and all others whose individual needs cannot be met successfully in Speech 1 or other courses in public speaking and oral interpretation. Five credits. Spring, Daily 11. *Bell*

12. Private Instruction. Individual attention given in private to particular needs of the student in an effort to eliminate personal defects, develop skill, and solve individual speech problems. Recommended for anyone needing personal speech and to freshmen and sophomores majoring in speech. Special fee. Two to four credits. Any quarter. Time arranged. *Staff*

13 or 113. Debate. This course is designed primarily for candidates for the junior debate team, though registration is not limited. It provides study of procedure in argumentation and debate, and offers opportunity for preparation and presentation of debates on subjects chosen for inter-collegiate competition. Some presentation of discussions on current events before community audiences. Only one quarter's credit each year may be used toward graduation. Students should register fall quarter if possible. Three credits. Fall, Winter, M. W. F. 2. *Greaves*

16. Dialect. A study of the most prominent dialect forms, their principles and uses. The dialect work of such writers as Burns, Kipling, Drummond, Riley, Dunbar, Harris, and Kirk will be studied, discussed, and learned. Three credits. Spring, M. W. F. 9. *Myers*

17. The Scientific Bases of Speech. Special consideration given to voice quality, rate, intensity, and pitch from the standpoint of vocal structure and function, the physics of voice, and phonetics. Recommended for all students of speech, and required of majors in Speech Correction. Three credits. Winter, M. W. F. 2. *Hadley*

18. Story Telling. The story as an educational factor; analysis and classification of typical stories with reference to each period of the child's development. Study of sources; adoption of material; and actual practice in story telling. Consideration is given to stories of western pioneer life. The work is designed to meet the needs of student, teacher, recreational leader, church activity leader, librarian, and parent. Five credits. Fall, Winter, and Spring. Daily, 10. *Myers*

24. Oral Interpretation. Intermediate course. A more advanced course than Speech 2, and one that puts into practice, by means of platform reading, the principles studied in Speech 2. Various literary types are memorized for platform presentation. A more specialized and artistic course than Speech 2. Three credits. Fall, M. W. F. 11. Winter, M. W. F. 9. *Greaves*

25. Speech Composition. Advanced theory and practice of public speaking. Three days a week will be devoted to the delivery of speeches built by the students, two days to the study of selected masterpieces from the world's oratorical literature, with special reference to the principles of speech composition and the historical backgrounds of the masterpieces. Five credits. Fall, Daily 9. *Greaves*

45. Acting: The One-Act Play. The literature and acting technique of the one-act play. Plays from such authors as Eugene O'Neill, Paul Green, Sir James Barrie, Maurice Maeterlinck, Lady Gregory, Lord Dunsany, J. M. Synge, William Butler Yeats, and others will be studied and prepared for public presentation. Three credits. Fall, Winter, T. Th. 3-5. *Morgan*

47. Survey of World Drama (Early Period). See English 47.

48. Survey of World Drama (Middle Period). See English 48.

49. Survey of World Drama (Modern Period). See English 49.

60. Drama Appreciation. An introduction to the understanding and appreciation of dramatic literature, radio plays, moving pictures. Selected readings concerning the contributions to the theatre by great personalities—actors, directors, producers, writers, designers, technicians, etc.—will be studied. Five credits. Spring, Daily 11. *Greaves*

75. Remedial Speech. This course is intended for those who have a noticeable difficulty with speech, in articulation, quality, pitch, intensity, or rhythm. Fall, Winter, and Spring. Time and credit arranged. *Hadley*

81. Radio Speech. A study of speech in radio presentation. Radio programs made up of the various types of radio speaking—announcing, interview, round table, quiz, drama, folk, panel, news casting, etc.—will be planned and

presented. An effort will be made to broadcast quality work over the local radio station. Three credits. Fall, Winter, and Spring, M. W. F. 11.
Morgan

104. Advanced Interpretation. The mastering of significant selections from the great writers. The student grows in power to interpret permanent literature. Reading from manuscript and from memory. Four credits. Winter, M. T. W. Th. 11. *Myers*

107. Speech Hygiene. The techniques of normal speech and the development of normal and abnormal speech. Major consideration will be given to the prevention and correction of speech abnormalities. This course is primarily designed to fulfill the speech hygiene needs of elementary school teachers. It is recommended for all secondary teachers but will not fulfill the speech pathology requirement for Speech majors. This course is required of all elementary school teachers by the State Board of Education. Three credits. Winter, M. W. F. 11. Spring, M. W. F. 2. *Hadley*

109. Public Discussion. Application of the various group discussion techniques to current problems. The open forum, the round table, the discussion conference, and other techniques for interchange of opinion are used. Approximately five current problems are discussed. Efforts are made to have some of the problems presented by members of the class to various civic and religious organizations or to release them over a commercial radio station. Three to five credits. Winter, Daily 10. *Greaves*

110. Public Programs. A study of types of interpretive material suitable for presentation before various kinds of audiences. Reading of short stories, plays, and novels to determine suitability. The cutting of literary types and material to suitable form and length for public reading. (Not given 1942-43.) Three credits. *Myers*

111. The Psychology of Speech. A study of the principles of psychology which underlie speech. Problems to be considered include the nature and origin of speech, emotion and speech, personality and speech, the development of speech and language in the child and the psychology of the audience. Three credits. (Not given 1942-43.) *Hadley*

112. Private Instruction. Advanced specialized work. Special attention is given to the student's deficiencies in speech. Work in the story, drama, novel, poetry, and the various literary forms. It is recommended that all Speech majors have five hours. Consult instructor before registering. Special fee. Two to eight credits. Any quarter. Time arranged. *Staff*

123. Pedagogy of Speech. A study of the methods and problems peculiar to the teaching of Speech. A study of the organization of courses and lesson plans is included. Students may register only with the permission of the instructor. Two credits. Spring, T. Th. 9. *Myers*

150 a, b, c. Drama Production. A course designed to equip students with a working knowledge of the materials and processes of play producing, directing and acting. Such principles and problems as characterization, composition, picturization, movement, emphasis, preparation of the manuscript, play selection, casting, rehearsal organization and procedure, dramatic criticism, scenic design and construction, lighting, costuming, make-up, management, advertising, etc., will be considered. Those who plan to become directors of school and community drama should find this course useful. Students will act in, direct, and stage one-act plays, and will be assigned to work on staffs and crews of College-Community Theatre major productions. Prerequisite: Speech majors and minors, none; others, see instructor. Speech majors and minors should arrange to register all three quarters during one year. Three, four, or five credits each quarter. Fall, Winter, and Spring. Class meets M. W. F. 3-5 for three credits. Students who register for four or five credits will meet at other times to be arranged, and will work on additional production problems. $2.00 lab. fee for the year. *Morgan*

154. Children's Theater. Creative dramatics for children. A course in educational dramatics for students who wish to prepare to direct children in dramatic work. A study will be made of plays suitable for primary and intermediate schools. Courses in dramatics will be outlined, stories dramatized, and plays produced. The College Training School will afford opportunity for this work. Of special interest to prospective elementary school teachers. Consult instructor before registering. Three to five credits. Fall, W. 4-7. *Myers*

171. Speech Pathology. A comprehensive presentation of the generally known facts regarding the symptoms, nature, prevention, causes, and management of deviations from normal speech. This course is a highly technical course designed for teachers of speech and speech clinicians. It is required of all Speech majors, all those taking a composite Speech and English major and is elected by all majors in Psychology. Five credits. Fall, Daily 11. *Hadley*

173. Speech Clinic. Application and discussion of methods applied to speech correction in the clinic. Training and practice through the supervised handling of selected cases. Students who have had one quarter of experience are allowed to participate in extension clinics. Prerequisite or corequisite, Speech 171. Consult the instructor for permission to register. Any quarter. Time and credit arranged. *Hadley*

183. Problems in Speech. Especially selected work, individually assigned, handled, and directed in consultation with the student. Special Speech problems of merit and of mutual interest to students and instructor are investigated and reported upon in this course. Consult the instructor for permission to register. Any quarter. Time and credit arranged. *Staff*

Zoology and Entomology

W. W. HENDERSON, *Professor;* C. J. SORENSON, G. F. KNOWLTON, *Associate Entomologists;* J. SEDLEY STANFORD, D. M. HAMMOND, G. H. KELKER, *Assistant Professors.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students specializing in Zoology and Entomology must select either Zoology or Entomology as a major.

For a major in Zoology students must take the following courses: 3, 4, 13, 106, 112, choice of 2 out of the following 3 courses: 114, 115, 116; 117, 118, 119, 124, 125, 126, 131. For a major in Entomology students must take the following courses: 3, 4, 13, 14, 101, 102, 103, 106, 111, 114 or 116, 115, 124, 125, 126.

Majors in Zoology or Entomology must complete at least 30 hours in the following: Chem. 3, 4, and 5, or 10, 11, and 12; 15 hours. (At least 10 hours.) Physics 3; five hours. Botany 21, 22, 23; nine hours; (At least 6 hours.) Bact. 1 and 2; five hours. Geol. 1; five hours. Entomology majors add Botany 130, three hours.

For a detailed schedule of courses leading to an entomological major in the School of Agriculture, see page 78.

For a premedical major in Zoology, see page 104.

Students who intend to do graduate work in Entomology or Zoology are advised to study German for at least three quarters, and French for three quarters and complete the course in Math. 111 or Agron. 115.

1. Principles of Biology. A fundamental course in the basic life principles as illustrated in both plant and animal forms. Special attention will be given to the nature and structure of protoplasm, differentiation in plant and animal cells, adaption, reproduction and development, basic metabolic processes, hered-

ity and evolution, types and phylogenetic relationships as exhibited in the major groups of plants and animals. For junior college students, except those who may elect Botany 21, 22, and 23, or Zoology 3 and 4. Four lectures and one laboratory a week. Five credits. Fall, Winter, and Spring. Lecture, M. T. W. Th. 11; laboratory, Fall, Section 1, M. 2-5; Section 2, W. 2-5, Section 3, F. 2-5; Winter; Section 1, T. 2-5, Section 2, Th. 2-5, Section 3, F. 2-5; Spring, Section 1, M. 2-5, Section 2, W. 2-5, Section 3, F. 2-5. *Henderson*

2. General Zoology. A brief survey of the more important groups of animals, including the organization, behavior, reproduction, classification and relationships of each group. The basic principles of greatest importance in the field of Zoology will receive some consideration. This course is especially designed to meet the needs of students in the schools of Agriculture and Forestry for a basic course in Zoology. Five credits. Fall or Spring, M. W. F. 10; Lab., T. Th. 2-5. *Stanford*

3. Invertebrate Zoology. This course is a type study of the invertebrate animals. General classification and relationships, structural characters, development and functions are emphasized. Some attention is also given to parasitism. This course is well adapted for premedical students, Forestry (Wildlife) majors, and others who desire a comprehensive introduction to the animal kingdom. Five credits. Fall, M. W. F. 9; Lab., M. W. or T. Th. 2-5. *Hammond*

4. Vertebrate Zoology. The same general plan as given in course 3 is followed in the study of the vertebrates. Some attention is given to the local fauna. Five credits. Winter, M. W. F. 9; Lab., M. W. or T. Th. 2-5. *Stanford*

13. General Entomology. The structure, classification, interrelationships, and life histories of insects are studied. Some field trips are taken. This is a fundamental course and is required of all department majors. Five credits. Fall, M. W. F. 8; Lab., M. W. F. 12-2. *Stanford*

101. Insect Morphology. Comparative study of insect anatomy with emphasis placed on the structures used in taxonomy. Prerequisite, Zoo. 13. Required for Zoo. 102, 103, and 104. Four credits. Two laboratory periods, time arranged. Winter, M. W. 11, Lab., M. W. 12-2. (Not given 1942-43.) *Stanford*

102. Systematic Entomology. Zoo. 101 is prerequisite. Each student must collect, mount, and label a representative collection of insects. The collection must contain at least 300 specimens, at least 100 species, and at least 15 orders. The whole collection must be arranged in phylogenetic sequence. Classification will include only a correct placing of all specimens in orders. To be taken only with the permission of the instructor. Three laboratory periods. Three credits. Any quarter. Time arranged. *Henderson*

103. Systematic Entomology. Continuation of Zoo. 102. The collection arranged for Zoo. 102 must be enlarged to 500 specimens, 150 species, 100 families, and 18 orders. Classification will include a correct placing of all specimens in families. Graduate credit allowed. To be taken only with the permission of the instructor. Three laboratory periods. Three credits. Any quarter. Time arranged. *Henderson*

104. Systematic Entomology. Continuation of Zoo. 103. Permission to take this course depends on the student's collection for Zoo. 102 and 103. If his collection justifies further study, he may select one or two orders of insects and classify them to species. Graduate credit allowed. To be taken only with the permission of the instructor. Three laboratory periods. Three credits. Any quarter. Time arranged. *Henderson*

105. Forest Entomology. A study of the principal insects attacking forests and forest products. Some attention is also given to the principles of biological control. A brief study is made of forest vertebrates with emphasis on insect-eating birds. Three credits. Fall, T. 9, Lab., T. Th. 11-1. *Stanford*

106. Zoological Literature. The historical development of Zoology and Entomology, their literature and bibliographies are discussed. Each student is assigned, or may choose, a report on the literature of some insect or other

animal. Prerequisite, two or more of the fundamental courses required of department majors. Graduate credit may be allowed for this course. One lecture and one lab. Two credits. Spring, W. 12, one hour arranged. *Stanford*

108. Agricultural Entomology. The recognition, life history, and control of the major insect pests of agricultural crops are studied. Particular attention is given to the injurious and the beneficial insects of Western North America and of Utah. Four credits. Winter, M. W. F. 8; Lab., W. or F. 2-5. *Sorenson, Knowlton*

109. Advanced Economic Entomology. A continuation of Zoo. 14, involving advanced study of insects of economic importance and their control. Prerequisite, Zoo. 14; with organic chemistry recommended. Graduate credit allowed. Five credits. Winter, M. W. F. 10; Lab., T. Th. 2-5. This course will be given in alternate years only. (Not given in 1942-43.) *Sorenson or Knowlton*

111. Heredity and Eugenics. A non-technical study of the more evident behavior of the germ cells in reproduction, experimental hybridization, and the simpler principles underlying the inheritance of traits. Consideration is given to the eugenic value of human races, inferior and superior families, sexual selection and marriage, birthrate, immigration, and other principles having eugenic significance. Four credits. Fall, or Winter, M. T. W. Th. 1. *Henderson*

112. Principles of Genetics. A technical study of the cytological and experimental bases underlying heredity and variation. This course is a fundamental requirement for all students of plant breeding, animal breeding, or human heredity. It considers qualitative and quantitative traits, factor independence, interaction, linkage relations, gene and somatic mutations, sex-determination and modification, and relate subjects. Students taking this course must have had Zoo. 111 or some good general course in Biology. Graduate credit allowed. Five credits. Fall, Daily 10. *Henderson*

114. Protozoology. A survey of the phylum Protozoa, with emphasis on the forms parasitic upon man, and domesticated and wild animals. The structure, physiology, and reproduction of the Protozoa are considered in their relation to these aspects of cells generally and to the field of Biology as a whole. In the laboratory the protozoan forms of local streams and ponds are studied, as well as the forms living on and in other animals and man. Graduate credit is allowed for this course. Prerequisite, Zoo. 3. Three credits. Fall, T. Th. 8; Lab., W. 2-5. This course will be given in alternate years only. (Not given in 1942-43.) *Hammond*

115. Medical and Veterinary Entomology. This course introduces the students to those Arthropods that annoy and transmit disease to man and domesticated and wild animals. Vectors of plague, spotted fever, tularemia, malaria an other Arthropods carrying disease in Western North America will receive major attention. Prerequisite, Zoo. 13 or equivalent. Four credits. Winter, T. Th. 8; Lab., F. 2-5, one lab. arranged. *Stanford*

116. Parasitology (Helminths). A study of the worms parasitic on man, domestic and wild animals, and a consideration of the diseases caused by them. The flukes, tapeworms and roundworms, occurring in this region, will be emphasized. The study includes diagnosis, life histories, transmission, treatment and prevention of the important diseases caused by worms. Prerequisite, Zoo. 3. Three credits. Spring, M. W. 9; Lab., W. 2-5. *Hammond*

117. Methods and Elements of Animal Histology. An introduction to the techniques employed in making preparations of animal tissues for miscroscopic study, and a consideration of the structural characteristics of the tissues and principal organs in representatives of the groups of animals, especially vertebrates. Four credits. Fall, T. Th. 9; Lab., T. Th. 2-5. Winter, T. Th. 10; Lab., T. Th. 2-5. *Hammond*

118. Vertebrate Embryology. An introduction to the principles of development of the vertebrates, including the formation of gametes, fertilization, cleav-

age, gastrulation, formation of germ layers, establishment of body form, and organogenesis. In the laboratory the development of the frog, chick and pig is studied. Required of premedical students. Prerequisite, Zoo. 4 or equivalent. Five credits. Winter, M. W. F. 10; Lab., M. W. 2-5. *Hammond*

119. Comparative Anatomy. A study of the fundamentals of structure of the vertebrate body. The anatomy of typical representatives of each class of vertebrates and the organ systems from the simplest to the most complex forms are studied on a comparative basis. In the laboratory, the shark and the cat are thoroughly dissected. This course provides useful training for premedical as well as Zoology majors. Prerequisite, Zoo. 4 or equivalent. Graduate credit allowed. Four credits. Spring, T. Th. 8; Lab., T. Th. 2-5. This course will be given in alternate years only. (Not given in 1942-43.) *Hammond*

121. Ornithology. A course in bird study planned to acquaint the students with our native birds and with the class Aves (birds) in general. Identification, relationships, structure, habits, and distribution will be studied in classroom, laboratory, and field. Four credits. Spring, T. Th. 9; Lab., T. Th. 10-12. *Stanford*

122. Mammalogy. This course is designed to introduce the students to the large and very important class, Mammalia (animal), with particular reference to Utah and North American species. Identification, distribution, structure, habits, and economic importance will be stressed. Four credits. Winter, T. Th. 9; Lab., T. Th. 10-12, and one arranged. *Stanford*

123. Nature Study (Animal Life). Teachers and other students of nature will learn the names of birds, mammals, frogs, reptiles, fishes, insects, etc., in this course; also interesting and useful facts concerning their habits, homes, and use to man. Display methods will be discussed and illustrated. This course will aid teachers in identifying their local animal life and in making study collections for their schools. Three credits. Spring, T. Th. 1; Field trips and Lab. arranged. *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 majoring in the department must attend and participate in the activities of this seminar for at least three quarters. The Winter quarter of each year will be especially concerned with entomological subjects. One credit each quarter. Fall, Winter, and Spring. Time arranged. *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. Graduate credit allowed. Three credits. Spring, M. W. F. 8. *Henderson*

135. Museum. This is a course in the display, preparation, and care of animal specimens for the museum or for visual education, for senior majors in Zoology and Entomology. The equivalent of an hour a day is to be spent in this work for one quarter. The student will be expected to describe displays intelligently to visitors and assume charge of the museum on arranged periods. Expense involved in the preparation of specimens will be met by the department and the material will be left in the museum as a contribution of the student. Graduate credit allowed. One credit. Any quarter. Time arranged. This course will be given in alternate years only. (Not given in 1942-43.) *Stanford*

138. Aquatic Entomology. Identification, distribution, life histories and adaptations of aquatic insects will be studied with particular reference to our local streams and lakes. Three credits. Two lectures, one Lab. Spring. Time arranged. *Stanford*

140. Animal Ecology. Distribution and behavior of animals as affected by environment. Physical factors, food relationships, animal numbers, distribution of species, and biotic communities. Prerequisite, Botany 126. Graduate credit allowed. Three credits. Fall, M. 10; Lab., M. W. 2-5. *Kelker*

155. Ichthyology. Ecology, classification, and life histories of native and introduced fishes. Practical problems of fish culture. Three lectures. Two laboratories. Field trips. Three credits. Fall, T. Th. 9; Lab., Th. 2-5. *Kelker*

199. Minor Problems in Zoology or Entomology. A course in research problems similar to Zoo. 201 and 210, but intended primarily for undergraduate majors in Zoology and Entomology and for graduate work on problems of a less advanced nature. Any quarter. Time and credit arranged. *Staff*

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 undergraduates only by special arrangement with the department. Thesis required. Any quarter. Time and credit arranged. *Staff*

205. Methods of Research. For students doing or intending to do original work in some line of Zoology or Entomology, this course offers instruction in selection of topics for research, organization of attack upon problems, methods of finding previously published work, outlining the problem, illustration of the thesis, etc. Required of graduate students who are working for a Master's degree in the department. One credit. Winter. Time arranged. *Hammond*

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 required. Open to undergraduate students only by special permission. Prerequisites, Zoo. 13, 14, and 102. Any quarter. Time and credit arranged. *Staff*

217. Advanced Histological Technique. A continuation of Zoology 117 for graduate students, and for students who wish a more thorough and extensive training in the techniques of preparation of biological materials for study. Additional technique such as the celloidin method, freezing method, embalming and injection of specimens, etc., will be undertaken. Prerequisite, Zoo. 117. Two credits. Spring, M. 2-5, one Lab. arranged or time arranged with the permission of the instructor. *Hammond*

SCHOOL OF COMMERCE

W. L. WANLASS, *Dean*

Departments

Agricultural Economics and Marketing 142

Business Administration 144

Accounting 146

Business Administration 147

Merchandising 148

Economics 150

Political Science 153

Secretarial Science 156

Sociology 160

Social Work 162

General Information

THE purpose of the School of Commerce is to give opportunity for a liberal education with special emphasis upon the commercial, social and political phases of life. Persons who complete the courses offered in this School are prepared to assume leadership and responsibility in business and in various industries and professions. In order to meet the growing demand and to keep pace with recent tendencies in education, students may major in Accounting, Business Administration, Merchandising, Secretarial Science, Economics, Political Science, Sociology, Agricultural Economics and Marketing.

For the professions of law and medicine some of these subjects such as Economics or Political Science afford excellent preparation. Graduates are prepared for positions as teachers in high schools. Many desirable positions as industrial managers are open to those who are qualified by training and experience. Many students who are especially qualified find employment in the field of retail and wholesale merchandising.

Special attention is called to the many opportunities for service in sociological and governmental work. (See Training for Government Service.) The Departments of Political Science and Sociology offer basic and professional courses in these fields.

For requirements for admission, certification, and graduation see pages 49 to 58.

NOTE: All students in the School of Commerce are urged to take Textiles and Clothing 15 and Principles of Nutrition 5.

TRAINING FOR GOVERNMENT SERVICE

The Federal Government during recent years has employed increasing numbers of College-trained men and women who are qualified for service in its various departments. In all probability this expansion of government activity will continue for several years. In suggesting the following courses the School of Commerce has attempted to indicate lines of study which will be helpful in preparing for government service. With slight modification, these courses will serve equally well to qualify the student for desirable positions outside the field of government service, as the basic requirements in both fields are similar.

SUGGESTED COURSES

I. **Accounting:** Accounting 1, 2, 26, 29, 101, 102, 103, 104, 105, 111, 120, 121, 127; Political Science 129.

II. **Land Economics:** Economics 25, Economics 51-52 or Agricultural Economics 53a, b; Agronomy 6; Political Science 1, 10 and 129; Business Administration 141; Agricultural Engineering 1, 10; Geology 3.

In addition the student should satisfy the requirements for a major in Agricultural Economics.

III. **Marketing:** Economics 25, 51, 52; Mathematics 34, 35, 60, 111. Agricultural Economics:

The student should satisfy the requirement for a major in this department.

In addition a thorough preparation should be made in the special fields in which it is desired to work such as wool, dairying, etc.

IV. **Consular and Diplomatic Service:** Political Science 10, 11, 12, 13, 101, 102, 104, 105, 106, 107, 129; Foreign Language, German, French, or Spanish, depending upon the location desired; English 10, 11, 112; Economics 51, 52, 140.

V. **General Administrative Training:**

It is felt that anyone contemplating government service should have an intimate knowledge of the workings of our government and its relationship to industry. To supply that need the following courses are suggested: Political Science, 10, 109, 129, 130 or 155, 140 or 145, 220, 221; Economics 125, 147.

VI. **Statistics:** Mathematics 58, 59, 60 and 111; Economics 25, 51, 52, 131.

VII. **Secretarial Science;** Secretarial Science 30, 65, 80, 81, 82, 89, 90, 91, 94, 98, 175, 183, 184, 185, 186, 187; Business Administration 1, 2, 25, 101, 135; Economics 51, 52, 140; Political Science 10, 129; Sociology 70.

VIII. **Sociology:**

For Case Work:

Psychology 102, 103, 110.
Child Development 140, 150.
Physiology 108, 109.
Sociology 52, 70, 71, 140, 146, 162, 172, 220.

For Social Research:
Mathematics 58, 59, 60 and 111.
Sociology 70, 202, 220.
Thirty hours of factual courses in the Department.

Field Work under supervision.

Agricultural Economics and Marketing

Administered jointly by the School of Agriculture and the School of Commerce

W. P. THOMAS, *Professor;* G. T. BLANCH AND H. H. CUTLER, *Associate Professors;* D. A. BROADBENT, *Assistant Professor;* G. A. CARPENTER, *Extension Economist.*

Students majoring in the Department of Agricultural Economics and Marketing may be graduated from either the School of Agriculture or the School of Commerce. The choice of school in which to register should be determined by the field in which the student intends to do his minor work.

Those graduating from the School of Agriculture must satisfy requirements for graduation from that school in addition to agricultural courses prescribed by the major professor; those graduating from the School of Commerce must, in addition to satisfying the requirements for graduation from that school, include certain basic agricultural courses to be prescribed by the major professor.

In order to meet the requirements of students who plan to do graduate work or to enter into a field of employment where technical training is required, a special course has been provided for such students majoring in agricultural economics. Students satisfying requirements as prescribed for this course may graduate from either the School of Agriculture or Commerce. A schedule for this prescribed course may be obtained from the office of the Department of Agricultural Economics.

Agricultural Economics 53a and 53b or Economics 51 are prerequisite for all other courses in agricultural economics.

Rural Economy

53a and 53b. Principles of Economics. An introductory course in basic principles of economics with emphasis on those principles which are of particular importance in the field of agriculture and forestry. Three credits each quarter.

53a: Fall. Sec. 1, M. W. F. 10. Sec. 2, T. Th. 11, F. 12. Winter, Sec. 3, T. Th. 8, F. 12.

53b: Winter. Sec. 1, M. W. F. 10. Sec. 2, T. Th. 11, M. 12. Spring. Sec. 3, M. W. F. 10. *Cutler*

54. Principles of Agricultural Economics. An introduction to the field of agricultural economics with emphasis on the application of economic principles to the solution of agricultural problems. Three credits. (Not given in 1942-43.)

104. Economic Development of Agriculture. An economic analysis of geography and use of agricultural resources with special reference to the United States. Three credits. Spring, M. W. F. 8. *Blanch*

230, 231, 232. Public Problems in Agriculture. Seminar courses designed to familiarize the student with economic implications of problems confronting agriculture with special references for year 1942-43 to impacts of war and postwar problems in agriculture. Two credits. Fall, Winter and Spring, W. 3-5. *Staff*

Farm Management, Land Economics and Agricultural Finance

70. Farm Accounts. Farm accounts and their application to the organization and management of farms and to the filing of income tax statements. A fee of $1.00 will be charged for materials supplied. Three credits. Fall, Sec. 1, T. Th. 11-1; Spring, Sec. 2, T. Th. 11-1. *Blanch and Broadbent*

102. Principles of Farm Management. A study of the principles underlying the organization, management, and financial success of farms. Rates of production, labor efficiency, combination of enterprises and farm layout will be discussed. A fee of $1.00 will be charged for materials supplied. Three credits. Fall, Sec. 1, M. W. F. 9; Winter, Sec. 2, M. W. F. 8. *Blanch and Broadbent*

105. Agricultural Finance. A study of principles of agricultural credit. Emphasis is given to problems and methods of financing agriculture. Three credits. Fall, M. W. F. 11. *Cutler*

106. Land Economics and Utilization. A study of the economic principles underlying the utilization, valuation and tenure of agricultural land. Attention is given to prevailing land policies and to methods and techniques involved in dealing with problems of land use. A fee of $1.00 will be charged for materials supplied. Five credits. Spring, Daily 9. *Blanch*

202. Advanced Farm Management. Designed primarily to give students advanced training and experience in farm management. Prerequisite, Principles of Farm Management 102. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, T. Th. 3-5. *Broadbent*

206. Land Appraisal and Classification. A basic course in land appraisal and economic classification of land. Two credits. Fall, T. Th. 3-5. *Blanch*

Marketing and Prices

62. Principles of Marketing. A basic course designed for students in commerce, home economics and agriculture. Five credits. Winter, Daily 9. *Cutler*

110. Marketing Agricultural Products. A course in principles, problems and methods of marketing agricultural products. Three credits. Fall, M. 12, T. Th. 8. *Cutler*

113a. Farm Cooperatives. A course in principles underlying the organization, operation and management of cooperative sales, purchasing and service associations. Three credits. Winter, T. Th. 9, M. 12. *Thomas*

113b. Analysis of Farm Cooperatives. For students who desire detailed work in organization and management of cooperatives. Prerequisite, 113a, Farm Cooperatives. A fee of $1.00 will be charged for materials supplied. Two credits. Spring, T. 2, F. 3-5. *Thomas*

114. Marketing Fruits and Vegetables. The production and marketing factors as they relate to the marketing of fruits and vegetables with special reference to Utah conditions. Three credits. (Not given in 1942-43.)

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 conditions. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, T. Th. 10, F. 12. *Broadbent*

120. Agricultural Prices. The relationship between agricultural and non-agricultural prices and income, together with the state and national agricultural outlook reports, will be given consideration. Three credits. Winter, M. W. F. 11. *Thomas*

121. Price Analysis. A study of statistical and other methods used in analyzing prices and other economic data. A fee of $1.00 will be charged for materials supplied. Three credits. Spring, M. W. F. 11. *Broadbent*

Special Graduate Courses

210. Research Methods in Agricultural Economics. A fee of $1.00 will be charged for materials supplied. Three credits. Winter, T. Th. 3-5. *Broadbent*

214. Research in Agricultural Economics. Thesis. Any quarter. Time and credit arranged. *Staff*

215. Special Problems in Agricultural Economics. Any quarter. Time and credit arranged. *Staff*

RECOMMENDED COURSES FOR STUDENTS IN SCHOOL OF AGRICULTURE

Freshman Year

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Ag. Economics 53a	3	Ag. Economics 53b	3	Speech 1	5
Botany 21	3	Botany 22	3	Horticulture 1	4
Mathematics 34	3	Mathematics 35	5	Mathematics 46	5
Vegetable Crops 1	4	Dairy 1	3	Poultry 1	3
Animal Husbandry 1	3	Agronomy 1	3		
	16		17		17

Sophomore Year

Chemistry 10	5	Chemistry 11	5	Chemistry 12	5
Landscape Arch. 3	3	English 40	5	English 10	5
Ag. Economics 70	3	Physiology 4	5	Agronomy 6	5
Animal Husbandry 10	3	Typing 86	1	Typing 87	1
Ag. Engineering 15	3			Poultry 2	1
	17		16		17

Junior Year

Mathematics 110	3	Ag. Economics 120	3	Ag. Economics 121	3
Ag. Economics 102	3	Economics 135	3	Ag. Economics 106	5
Ag. Economics 110	3	Animal Hus. 100	5	Ag. Economics 116	3
Bacteriology 1	4	Sociology 10	3	Ag. Engineering 10	4
Bacteriology 2	1	Business Admin. 100	3	Ag. Economics 114	3
Agronomy 118	2		17		18
	16				

Senior Year

Ag. Economics 230	2	Ag. Economics 231	2	Ag. Economics 232	2
Ag. Economics 206	2	Ag. Economics 210	3	Ag. Economics 202	3
Economics 106	3	Economics 107a	3	Economics 107b	3
Ag. Economics 105	3	Ag. Economics 113a	3	Ag. Economics 113b	2
Economics 165	3	English 110	4	English 5	3
Agronomy 102	2	Elective	2	Ag. Economics 104	3
Elective	2		17		16
	17				

Business Administration

(Including Accounting and Merchandising)

P. E. PETERSON, W. L. WANLASS, *Professors;* V. D. GARDNER, WAYNE L. BENNION, *Associate Professors;* L. MARK NEUBERGER, WILLIAM L. WATSON, *Assistant Professors;* INA DOTY, CLARA P. WEST, ALFRED W. SWINYARD**, *Instructors.*

Students majoring in the Department of Business Administration and Accounting may concentrate in the fields of Accounting, Finance, Management, Merchandising, and Secretarial Science. Students are advised to select from the courses listed below to complete their major and technical subjects according to their field of concentration. (Students majoring in the field of Secretarial Science should register under the advice of the Department head.)

RECOMMENDED COURSES FOR MAJOR AND SPECIAL GROUPS IN BUSINESS ADMINISTRATION

Freshman Year

Dept.	No.	TITLE OF COURSE	Accounting	Finance	Bus. Adm.	Merchandising
B.A.	1–2	Int. Accounting	10*	10*	10*	10*
B.A.	63	Salesmanship	..	..	3	3
Econ.	51	General Economics	5*	5*	5*	5*
Econ.	25	Economic Resources of U. S.	3	3	3	3
Econ.	26	Economic Geography of World	3	3	3	3
Econ.	27	Economic Dev. of U. S.	3	3	3	3
Psy.	3	Psychology	5	5	5	5
P.S.	11-12-13	Commercial Law	9	9	9	9

**On leave.

Sophomore Year

Dept.	No.	TITLE OF COURSE	Accounting	Finance	Bus. Adm.	Mer-chan-dising
B.A.	25	Int. Business Administration	5*	5*	5*	5*
B.A.	26	Ele. Cost Accounting	5*	5*	5*	5*
B.A.	62	Int. Marketing	5	5	5*	5*
B.A.	28	Int. Business Finance	5*	5*	5*	5*
B.A.	29	Int. Gov. Accounting	4*	4	..	..
B.A.	55	Int. Personnel Administration	..	..	3*	3*
Econ.	52	Advanced General Economics	5*	5*	5*	5*
Math.	34	Algebra	3*	3*	3*	3*
Math.	35	College Algebra	5*	5*	5*	5*
Math.	60	Math. of Investment	3*	3*	3*	3*
B.A.	54	Psychology of Business	3	3	3	3

Junior Year

Dept.	No.	TITLE OF COURSE	Accounting	Finance	Bus. Adm.	Mer-chan-dising
B.A.	101–2–3	Problems in Acctg. Principles	9*	9*	9*	9*
B.A.	104–105	Practical Accounting Problems	6*	6*	6	6
Math.	111	Elementary Stat. Methods	5*	5*	5*	5*
B.A.	140	Insurance	..	3	3	3
B.A.	141	Real Estate	..	3	3	..
B.A.	151–2–3	Prob. In Merchandising	..	..	9	9*
B.A.	156–7	Principles and Probl. of Advt.	..	..	6	6*
B.A.	158	Retail Advertising	..	..	3	3*
B.A.	161–2–3	Problems in Retail Distribution	..	..	9	9*
Econ.	145	Economics of Consumption	..	..	2	2
Econ.	165	Money and Credit	3*	3*	3*	3*
Econ.	167	Banking	3	3*	3	3
P.S.	104–5–6	Commercial Law	9*	9*	9*	9*

Senior Year

Dept.	No.	TITLE OF COURSE	Accounting	Finance	Bus. Adm.	Mer-chan-dising
B.A.	111	Cost Accounting	5*	5	5	5
B.A.	120–21	Auditing Principles	8*	8	..	..
B.A.	123	Financial Investigations	4*	4	..	..
B.A.	124	Accounting Seminar	2*	..	..	..
B.A.	130	Investments	5	5*	..	..
B.A.	131	Business Statistics	5*	5*	5*	5*
B.A.	133	Industrial Management	5	5*	5*	..
B.A.	134	Interpretation of Fin. State	5	5*	..	..
B.A.	135	Budgets	5*	5	5	5
B.A.	136	Business Ethics	2	2	2	2
B.A.	149	Business Policy	5	5	5*	5*
B.A.	154	Industrial Purchasing	..	..	4	4*
B.A.	160	Sales Management	..	..	4	4
B.A.	164	Credit Administration	..	4*	4*	4*
Sec.Sc.	175	Office Management	3*	3*	3*	3
Econ.	107a–b	Advanced Economics	6*	6*	6*	6*
Econ.	171	Economics of Business Cycles	3*	3*	3*	3*
Econ.	172	Business Combinations and Monop.	3	3*	3	..
Econ.	173	The Social Control of Business	..	3	3*	..
P.S.	107–8	Commercial Law	6*	6*	6*	6*

Note: Inasmuch as some of the above courses are taught only every other year, the student is not required to take the courses in the year indicated. However, the general outline should be followed whenever possible.

*Urgently recommended.

ACCOUNTING

1, 2. Introductory Accounting. The purpose of this course is to present the basic principles of accounting in the form of questions, problems, and practice sets which requires 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 emphasized. Five credits each quarter. B.A. 1: Fall, M. W. F. 11; Lab., T. Th. 2-5. B.A. 1: Winter, M. W. F. 11; Lab., T. Th. 2-5. B.A. 2: Spring, M. W. F. 11; Lab., T. Th. 2-5. *Gardner*

26. Elementary Cost Accounting. An elementary course developing basic principles. More complex and controversial aspects will not be considered. Attention will be given to departmental accounting, process accounting, job-lot cost accounting. Elementary principles of burden distribution will be considered. Five credits. Spring, Daily 10. (This course alternates yearly with Introduction to Governmental Accounting, B.A. 29.) (Not given 1942-43.) *Gardner*

29. Introduction to Governmental Accounting. A study of basic principles underlying the treatment of public and governmental accounts. Typical matters to be discussed are: funds, the budget, revenues and appropriations, trust funds, property accounts, and financial reports for governments. Three credits. Spring, M. W. 1, Th. 10. *Gardner*

Calculator Operation. (See Secretarial Science 94.)

Commercial and Bank Posting. (See Secretarial Science 98.)

100. Accounting for Non-Commercial Students. A brief course in Accounting necessary to meet the needs of students in the School of Engineering, School of Agriculture, and other non-Commercial students. Three credits. Winter, M. W. F. 8. *Gardner*

101, 102, 103. Problems in Accounting Principles. This is a course in fundamentals and brings to the classroom some of the vividness of the real problems as they arise in business. A critical understanding of accounting as it serves the executive is the aim of the course. Required of all majors in Business Administration and Accounting. Graduate credit may be allowed upon the completion of some additional work. Three credits each quarter. Fall, Winter, and Spring, M. W. F. 10. *Peterson*

105. Practical Accounting Problems. Problems presented will be drawn from examinations of American Institute of Accountants and State Boards. Course is required of all students majoring in accounting. Three credits. Spring, M. W. F. 9. *Gardner*

111. Advanced Cost Accounting. Process cost accounting, standard costs, estimating cost systems, distribution costs, special considerations. Five credits. Fall, Daily 9. *Gardner*

120, 121. Auditing, Theory and Practice. A study of auditing principles and techniques. Oppurtunity will be given to engage in a limited amount of actual audit practice. Four credits each quarter. Fall and Winter, T. Th. 10; Lab., M. W. 2-5. *Peterson*

123. Auditing. Investigations for financing. A practical course in the application of auditing where securities are to be sold to the public or to private investors. The student must have completed the equivalent of B.A. 120, 121. Four credits. Spring, T. Th. 10; Lab., M. W. 2-5. (Not given 1942-43.) *Peterson*

124. Accounting Seminar. Two credits. T. Th. 9. *Peterson*

125. Accounting Research. Time and credit arranged. *Peterson*

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*Urgently recommended.

127. Income Tax Accounting. A study will be made of the important provisions of the Federal and State Income Tax Laws. Practical problems in Income Tax Accounting will be considered. Three credits. Winter, M. W. F. 9. *Gardner*

BUSINESS ADMINISTRATION

Lettering and Commercial Art. (See Art 110.)

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. Five credits. Fall, Daily 9. *Bennion*

28. Business Finance. This course treats of the structure of the corporate enterprise; providing 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, Econ. 51, 52, or equivalent, B.A. 1, 3. Five credits, Spring. Daily 9. *Bennion*

Business Communications. (See Secretarial Science 30.)

Commercial Art and Posters. (See Art 31.)

Color. (See Art 32.)

Psychology of Business and Industry. (See Psychology 54.)

55. Introduction to Personnel Administration. A critical analysis of the problems of labor management which confront the manager of a business enterprise and of policies and methods of dealing effectively with these problems. Five credits. Winter, Daily 11. *Bennion*

Mathematics of Investment. (See Math. 60.) Urged for all accounting and business administration majors.

Indexing and Filing. (See Secretarial Science 65.)

Elementary Statistical Methods. (See Math. 110 or 111.) Required of all accounting and business administration majors.

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 investment securities will be analyzed. Five crdits. Fall, Daily 11. *Peterson*

Business Statistics. (See Economics 131.)

133. Industrial Management Problems. Selected cases will be taken up for study and report. Problems in industrial location; on choice of site; on buildings and layouts; 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, B.A. 25. Three credits. Winter, M. W. Th. 9. *Gardner*

134. Interpretation of Financial Statements. This course aims to give experience in the use of accounting data for evaluating management, and determining the conditions of enterprises in which one may become interested. The course will cover: (1) the interpretation of balance sheets, of operating statements, and the changes between successive statements; (2) the validity of the accounting principles according to which the available information was compiled; (3) the adequacy of the information furnished as a basis for proper judgment of the enterprise; and (4) the financial and managerial significance of the data of special interest to investors, public and private accountants, credit men and teachers. Five credits. Winter, Daily 11. *Peterson*

135. Budgets. A study in the development and application of a system of budgetary control in American industry. Required of all Business Administration and Accounting majors. Five credits. Spring, Daily 11. *Peterson*

136. Business and Professional 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. Two credits. Winter, T. Th. 10. (Not given 1942-43.) *Wanlass*

Risk and Risk Bearing. (See Economics 139.)

140. Insurance. Studied primarily from the standpoint of the consumer of insurance services. Among the topics treated are: types of life and property insurance contracts, nature and uses of life and property insurance, life insurance as an investment, and the organization, management and government supervision over insurance companies. Attention will also be given to the findings of the Temporary National Economic Committee in its study of the life insurance industry. Three credits. Spring, M. W. F. 11. *Watson*

141. Real Estate. This course is designed for those who will be considering the purchase of real estate and of securities based upon real estate, and as an introduction to the general field of real estate contracts, forms, and principles. Recent Federal housing legislation will be analyzed. Three credits. Spring, M. W. F. 10. *Watson*

149. Business Policy. This is a co-ordinating course aimed to develop perspective and judgment and facility in solving business problems. Problems will be discussed in production, distribution, personnel, finance, control, legal and ethical aspects of business. Required of all majors in Business Administration. Five credits. Winter, Daily 9. *Gardner*

Office Management. (See Secretarial Science 175.)

190. Seminar in Business Education. (See Secretarial Science 190.)

191. Business Administration Seminar. Special reports and group discussion on current developments in business will be made. Open only to qualified juniors and seniors. One credit. Spring, W. 2. (Not given 1942-43.)

MERCHANDISING

62. Principles of Marketing. (See Ag. Econ. 62.)

63. Salesmanship. The history, development and opportunities in sales work will be covered. The necessity and methods of securing proper preparation for sales work in order to meet the problems encountered in both direct selling and retail selling will be analyzed. The principles of preparing for interviews, proper presentation, gaining favorable attention, arousing the desire to buy, meeting objections, and creating acceptance will be studied. For those who desire, special projects can be carried out in relation to a particular field or type of selling. Lectures and assigned cases. Three credits. Spring, M. W. F. 8. *Bennion*

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 consumer and industrial goods; sales organization and control, advertising and sales promotion; stock-turn, price policies. Three credits each quarter. Fall, Winter and Spring, M. W. F. 10. *Bennion*

154. Purchasing. This course involves a study of the significance of purchasing as a major activity in modern business. Consideration is given to organization, policies and control of the procurement function. Lectures and problems. Four credits. Fall, M. T. W. Th. 2. *Bennion*

155. Retail Buying and Merchandise Control. A study will be made of the merchandising division as applied to the retail field. Particular attention will be given to the department and specialty store fields. The duties of the buyer will be covered in relation to his function as a department manager. Fashion merchandising will be studied to give the student an introduction to interpreting consumer demand as it conditions the buying policies of a particular store. The importance of balanced assortments, price policies, control methods will be studied as an aid to the buyer in controlling stock, markdowns and slow moving merchandise as well as meeting seasonal demands. Selected Readings, assigned cases and reports. Four credits. Winter, M. T. W. Th. 2. (Not given 1942-43.) *Bennion*

156. Principles of Advertising. This course is intended to give a viewpoint to those who as business executives will direct publicity programs. The course includes study of the structure of advertisements, the appeals used in the preparation of advertisements for different product, the choice of media and work of advertising departments and agencies. Three credits. Fall, M. W. F. 8. *Bennion*

157. Problems in Advertising. The aim of the course is to lead the student to judge the possibilities of advertising as a sales tool for any type of product or size of firm and to formulate effective plans of sales strategy cooperatively with other sales promotional agencies. Actual cases will be studied and analyzed. Three credits. (Not given 1942-43.) *Bennion*

158. Retail Advertising and Sales Promotion. A study is made of: The functions of advertising in retail distribution; Planning the total advertising allowance; Breakdown of the publicity budget by seasons, by departments and by media; Publicity for different types of promotions; Distribution of publicity expense; Coordination of departmental plans; Control of the advertising budget; Open-to-spend report. Three credits. Winter, M. W. F. 8. *Bennion*

160. Sales Management. This course aims to give a broad view of the important phases of sales administration, planning and execution as applied to manufacturing and wholesale concerns. It deals specifically with the structure and functioning of the sales organization and the correlation of its activities with those of the production and other departments of the business enterprise. Specific attention is given to such topics as: marketing policies, sales planning sales branches, selection and training of sales force, control of sales operations, sales budgets, volume, margins and profits. Four credits. Winter, M. T. W. Th. 2. *Bennion*

161, 162, 163. Problems in Retail Distribution. This course is designed to meet the needs of students who wish to gain an understanding of the marketing field from the viewpoint of the retail distributor. The problems given major attention are: accounting and statistics, types of retail institutions, store location, store layout and merchandise classification, sales policies, service policies, merchandising, pricing, brand policies, relation with merchandising sources, and organization and administrative policies. The case method. Three credits each quarter. Fall, Winter, and Spring, M. W. F. 9. *Peterson*

164. Credit Administration. A study is made of the nature and functions of credit; forms of credit instruments; sources of credit information; organization and management of credit operating functions; technical and legal aspects of collections; credit and collection control. Four credits. Spring, M. T. W. Th. 2. *Bennion*

FALL

Cat. No. BA		Cr.	M	T	W	Th	F
1	Introductory Accounting (Lab. T. Th. 2-5)	5	11		11		11
25	Introductory Bus. Adm.	5	9	9	9	9	9
101	Problems in Acctg. Prin.	3	10		10		10
111	Advanced Cost Acctg.	5	9	9	9	9	9
120	Auditing Theory and Practice (Lab. M. W. 2-5)	4		10		10	

130	Problems in Investment	5	11	11	11	11	11
131	Business Statistics	5	8	8	8	8	8
151	Problems in Merchandising	3	10		10		10
151	Problems in Retail Store Mgmt.	3	9		9		9
154	Purchasing	4	2	2	2	2	
156	Principles of Advertising	3	8		8		8

Cat. No. BA	WINTER	Cr.	M	T	W	Th	F
1	Introductory Accounting (Lab. T. Th. 2-5)	5	11		11		11
54	Psychology in Business	3	10		10		10
55	Personnel Administration	5	11	11	11	11	11
62	Principles of Marketing	5	9	9	9	9	9
100	Acctg. for Non-Com'l Students	3	8		8		8
102	Problems in Acctg. Prin.	3	10		10		10
121	Auditing Theory and Practice (Lab. M. W. 2-5)	4					
127	Income Tax Acctg.	3	9		9		9
133	Industrial Management Prob.	3	1		1	9	
134	Interpretation Fin. Stmts.	5	11	11	11	11	11
139	Risk and Riskbearing (Econ. 139)	3	11		11		11
158	Retail Advt. and Sales Promotion	3	8		8		8
152	Problems in Mdsg.	3	10		10		10
160	Sales Management	4	2	2	2	2	2
162	Problems in Retail Mgmt.	3	9		9		9

Cat. No. BA	SPRING	Cr.	M	T	W	Th	F
2	Introductory Accounting (Lab. T. Th. 2-5)	5	11		11		11
29	Introd. Gov't Acctg.	3	1		1	10	
28	Business Finance	5	9	9	9	9	9
63	Salesmanship	3	8		8		8
103	Problems in Acctg. Prin.	3	10		10		10
105	Prac. Acctg. Problems	3	9		9		9
124	Seminar in Acctg.	2		9		9	
135	Budgets	5	11	11	11	11	11
136	Bus. & Prof'l Ethics	2		10		10	
140	Insurance	3	11		11		11
141	Real Estate	3	9		9		9
149	Business Policy	5	8	8	8	8	8
153	Problems in Mdsg.	3	10		10		10
163	Prob. in Retail Mgmt.	3	9		9		9
164	Credit Administration	4	2	2	2	2	

Economics

W. L. WANLASS, *Professor;* V. D. GARDNER, E. B. MURRAY, *Associate Professors;* H. H. CUTLER, W. N. WATSON, L. MARK NEUBERGER, *Assistant Professors.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students majoring in this Department should include the following senior college courses in either the major or special group. Economics 106, 107a-b, 125, 131, 135, 140, 147, 155, 165, 166, 171, 172, 173, 180, 181, 182, and 211; Agricultural Economics 113; Accounting 101 and 102; Political Science 105, 106, 107, 108, 116, 117 and 120.

25. Resources and Industries of the United States. An introductory course in economic geography. Emphasis is placed upon the resources in minerals,

land, forests, and power. Particular industries such as iron and steel, oil, and cotton are considered in detail. A brief discussion of the transportation system and foreign trade concludes the course. Three credits. Fall, M. 12, T. Th. 9.
Watson

26. Economic Geography of the World. A study of the world distribution of resources and industries with an analysis of the dependence and inter-dependence of nations. The geographic background of political and economic problems will be considered. Three credits. Winter, T. Th. 9, M. 1. *Watson*

27. Economic Development of the United States. A survey of the historical development of economic factors. Particular attention will be given to the rise of the American labor movement, the development of the monetary and banking system, the evolution of commerce and communication, and the course of American industrial development from the small one-man business of early times to the super corporations of today. Three credits. Spring, M. 1, T. Th. 9.
Watson

51. General Economics. An introductory course covering the entire field of Economics. After a brief survey of man's economic development, a careful study is made of those fundamental principles upon which modern economic life is based. Attention is also given to such subjects as money, credit, and banking. Five credits. Fall, Daily 8, 9, 11. Winter, Daily 9, 11. Spring, Daily 9.
Staff

52. Economic Problems. A continuation of Econ. 51. This course is especially designed for students who desire a more thorough grounding in Economics. A more intensive study of economic laws will be made with special reference to their application to present economic problems. Required as a prerequisite to all senior college courses in the School of Commerce except in Agricultural Economics. Prerequisite, Econ. 51. (Not open to freshman.) Five credits. Fall, Daily 10. Winter, Daily 8, 10. Spring, Daily 10. *Staff*

106. History of Economic Doctrines. A critical study of the origin and the development of the economic theories of the leading thinkers in the leading nations of the world from 1750 to the present time. Three credits. Fall, M. W. F. 10. *Wanlass*

107a, b. Advanced Economic Theory. A critical analysis of present day economic theories of value, distribution, and related subjects. This course must be taken by all students majoring in the departments of Business Administration, Agricultural Economics, and Economics. Prerequisites, Econ. 51, 52, or Ag. Econ. 53A, 53B. Three credits each quarter. Winter and Spring, M. W. F. 10. *Wanlass*

125. Labor Economics. The emphasis in this course is on the theory and practice of collective bargaining. Special attention is given to recent legislation that has promoted the growth of organized labor. Current issues in industrial relations are critically analyzed. Three credits. Fall, M. W. F. 8. *Murray*

131. Business Statistics. Application of statistical methods to problems of business with attention to graphs, analysis of time series, interpretation of index numbers and the statistics of particular industries and business in general. Prerequisites, Math. 111, Econ. 51 and 52. This course may be used for a major in Bus. Adm. Five credits. Fall, Daily, 8. *Gardner*

135. Transportation Economics. Emphasis is placed on railroad transportation in the United States. Some attention will be given to highway and airway 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, Econ. 51, 52. Three credits. Winter, M. 1, T. Th. 10. *Murray*

139. Risk and Risk Bearing. A study of the risks of economic life. Hedging, the short sale, futures and spot transactions and the produce and stock exchanges will be studied as well as the institution of insurance. Methods of

shifting, reducing and assuming risks will be studied. Three credits. Prerequisites, Econ. 51, 52. Winter, M. W. F. 11. *Watson*

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 debt and finance, and various means of promoting progress on a basis of sound economics. Prerequisites, Econ. 51, 52. Two credits. T. Th. 10. *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. Prerequisite, Econ. 51. Two credits. (Not given 1942-43.) *Wanlass*

147. Social Security. This course will survey the main divisions of social security legislaton; these divisions are workmen's compensation, legal minimum wage, regulation of hours, unemployment compensation, old age insurance, family wage systems, and health insurance. Prerequisites, one course in Economics and one in Political Science. Three credits. Winter, M. W. F. 8. *Murray*

150. Types of Economic Organization. A study of the various forms of economic organization that have been proposed, including some of the Utopias, Marxian socialism, Fascism, National Socialism, the Single Tax, Consumer's Cooperatives, Syndicalism, Guild-Socialism, Communism, and Capitalism. Three credits. (Not given 1942-43.) *Murray*

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, Econ. 51, 52. Three credits. Winter, M. W. F. 10. *Watson*

158. The Economics of War and Reconstruction. A consideration of the main economic problems of the war including, the economic needs of the nation at war, factors limiting national output, war finance, priorities, price control, and rationing. The economic requisites for a stable peace will be examined. Three credits. Fall, M. W. F. 11. *Watson*

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 to prices. Prerequistes, Econ. 51, 52. Three credits. Fall, M. W. F. 9. *Wanlass*

166. 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, Econ. 51, 52, and 165. Three credits. Winter, M. W. F. 9. *Wanlass*

171. Business Cycles. A study in the economics of cyclical fluctuations. A critical examination is made of the more significant theories which have been offered in explanation of the cycle. Problems of prediction and control are examined. The history of business cycles is studied. Prerequisites, Econ. 51, 52. Three credits. (Not given 1942-43.) *Watson*

172. Business Organization and Combination. This course deals with the factors which have led to the appearance of large scale business organizations and monopolies. Certain implications of social significance will be presented. Prerequisites, Econ. 51, 52. Three credits. (Not given 1942-43.) *Watson*

173. The Social Control of Business. Modern business is largely conditioned and influenced by different forms of social control. The business man must play the game according to the rules. One of the conditions of carrying on

business in the economic order is that the business man submit himself and his activities to the control of society. Public opinion, propaganda, codes of business morality, trade associations, and government regulation will all be considered. Prerequisites, Econ. 51, 52. Three credits. (Not given 1942-43.) *Watson*

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 problems and literature will be made. Required of students graduating in economics. Open only to seniors and graduates. One credit each quarter. T. 11. *Wanlass and Watson*

200. Research in Economics. Special investigations in problems in economics may be carried on by senior and graduate students. Credit will be granted according to work done. Any quarter. Time arranged. *Wanlass*

205. Graduate Seminar in Monetary and Banking Theory. The relation of monetary and banking theories to the problems posed by current world difficulties will be examined in some detail. Open to graduate students and seniors with adequate preparation. Two credits. (Not given 1942-43.) *Murray*

206. Graduate Seminar in Fiscal and Tax Problems. The problems of depression and emergency financing will be considered and attention will be focused upon the particular problems which arise out of the war-defense effort. Two credits. (Not given 1942-43.) *Wanlass*

207. Graduate Seminar on Monopoly and Combination. The relation between our historical individualistic society and the need for efficient production are to be analyzed. Interlocking world cartels and their significance will also be considered. Two credits. Spring, T. 3-5. (Not given 1942-43.) *Watson*

209. Graduate Seminar. A course designed to acquaint students with methods of research in the field of economics. A survey of the literature of economic research and practice in the carrying forward of research projects. Prerequisite, permission of instructor. Two credits. (Not given 1942-43.) *Wanlass*

211. Graduate Seminar. Same as Economics 209, except that emphasis will be placed upon a study of bibliographical materials in the field of economics and a thorough study of economic literature. Prerequisite, permission of instructor. Two credits. (Not given 1942-43.) *Murray*

Political Science

MILTON R. MERRILL, F. D. DAINES, ASA BULLEN, *Professors;*
GEORGE HOMER DURHAM, *Assistant Professor.*

See pages 53 and 54 for courses that may satisfy group requirements.

Students majoring in this department should include the following Senior College courses either in the major or special group. Political Science 101 or 102; 117 or 145; 118 or 124; 127, 128, 129, 180, 181, 182; Sociology 140. Nine hours each in History and Economics. Lower Division students should register also for Psychology 3 and Political Science 10.

1. Government and the Individual. This course introduces the student into the political world of American democracy. Attention is given to an examination of totalitarian governments and the philosophies of fascism and communism which form the theoretical basis of these regimes. Democracy as practiced in the United States and Great Britain is contrasted with these systems. Five credits. Fall or Winter, Daily 8. *Merrill*

10a. American Government. Special emphasis is on the actual operation rather than a study of the forms of governments. Major attention is given to the national government. Recommended prerequisite to all upper division courses in Political Science. Five credits. Fall, Daily 9 and 11. Winter, Daily 9. Spring, Daily 8, 11. *Staff*

10b. American Local Government. State, municipal and county or rural governments are studied. The course logically follows Political Science 10a. Five credits. Winter, Daily 11. Spring, Daily 9. *Durham*

11. Commercial Law. A general survey of the nature, source, form, expression, and classification of law. The place of law in business and commercial life. This course will be completed in one quarter and is intended as one of general information to students of the College outside the School of Commerce, as well as an introductory course to students intending to take any or all of the other Commercial Law courses. Open to all students of Sophomore standing or above. Three credits. Fall, M. W. F. 8. *Bullen*

12, 13. Commercial Law. A comprehensive study of the law of contracts and agency. Open to all students of sophomore standing or above. Three credits each quarter. Winter and Spring, M. W. F. 8. *Bullen*

70. Comparative Government. A comparative study of the various forms and kinds of governments that have developed in the modern world, with an analysis of the forces in the United States tending toward a fascistic or a communistic order of society. Three credits. Fall or Spring. M. W. F. 9. *Daines*

75. Latin American Governments. All the Latin American governments will be discussed in this course. Attention will also be given to political and economic relations of the United States with the Latin American states. Three credits. Fall, M. W. F. 8. *Daines*

101. American Foreign Policy. The place of the United States in the family of nations as affected by our traditions, interests, and interpretations of international affairs. Three credits. Spring, M. W. F. 11. *Merrill*

102. International Political Relations. Psychological, economic, racial, and other obstacles to international cooperation, as exemplified in recent events. The Treaty of Versailles; international law; the League of Nations; and present day world politics are discussed. Three credits. Winter, M. W. F. 11. *Merrill*

103. Principles and Problems of Government. A general survey of public affairs and governmental action in the modern world. Designed primarily for upper division students majoring outside the field of the social sciences but who desire some competence in the analysis of modern politics. Three credits. Fall, M. W. F. 11. *Merrill*

104. Commercial Law. A comprehensive study of the law of negotiable instruments. Prerequisites, Political Science 11, 12, 13. Three credits. Fall, T. Th. 8, M. 12. *Bullen*

105, 106. Commercial Law. A comprehensive study of the law of bailments, sales of personal property, partnerships, corporations, and bankruptcy. Prerequisites, Political Science 11, 12, 13, 104. Three credits each quarter. Winter and Spring. (Not given 1942-43.) *Bullen*

107, 108. Commercial Law. A comprehensive study of the law of real property. The nature and tenure thereof, estates, deeds, conveyancing, abstracts of title, mortgages and other liens, wills and decedent's estates. Prerequisites, Political Science 11, 12, 13, 104. Three credits each quarter. Winter and Spring. M. 12, T. Th. 8. *Bullen*

109. Introduction to Administrative Law. A general survey of the nature of administrative law and its development in the American system. Prerequisite, one year of Social Science. Two credits. Winter, T. Th. 10. *Durham*

116. History of Political Thought. Political theories and ideas from the Greek period to Edmund Burke. Three credits. (Not given 1942-43.) *Daines*

117a, b, c. American Political Thought. The development of American ideas concerning the State and political authority from colonial times to the present. The nature and purpose, methods of organizing and controlling political action

in terms of historical and social origins; and applicability to modern problems. Two credits. Fall, T. Th. 10, Winter, T. Th. 10, Spring, T. Th. 8. *Durham*

118. Political Parties. Their function in government; their organization and methods. Prerequisite, one year of Social Science. Three credits. Fall, M. W. F. 11. *Daines*

124. Public Opinion. An investigation of the psychological and other factors involved in the determination of opinion on public questions. The reliability of sources of information and the subjective influences involved are considered. Prerequisite, one year of Social Science. Three credits. Winter, M. W. F. 9. *Daines*

127a, b. Constitutional Law. A general two quarter course in American Constitutional Law with the case method being used extensively. The student may take 127b without 127a with the consent of the instructor. Prerequisite, Political Science 10. Three credits each quarter. Fall and Winter, M. W. F. 8. *Daines*

129. Public Administration. An introduction to the study of public administration for those contemplating public service careers. The role and techniques of management in public enterprise, the organization, legal bases, planning, staffing, personnel, finance, and public relations of modern government. Three credits. Spring, M. W. F. 10. *Durham*

140. American Legislation. Organization and procedure of legislative bodies. Influences at work in and character of output of national and state legislatures. The laboratory method of approach is used as far as is feasible. Parliamentary law is emphasized. Three credits. Winter, M. W. F. 2. *Daines*

145. Recent Political Thought. The period from Burke to the present is considered and particular attention is given to the philosophy of government. Three credits. Fall, M. W. F. 10. *Durham*

180, 181, 182. Current Political Problems. A course designed for upper division students. Required of those graduating in Political Science. Two credits each quarter. Fall, Winter, and Spring, T. Th. 11. *Merrill*

190. Lectures in Public Administration. This is a lecture course for major students in Political Science and related subjects. Lectures will be delivered by men and women actively engaged directly in government administration. One credit. Winter, M. 12. *Durham*

200. Research in Political Science. For senior and graduate students. Time and credit arranged. *Daines*

220. Relation of Government to Industry. An interpretation is sought of the present trends in regard to governmental regulation and control of important industries in the United States, the labor policies of the government, and governmental aids to industry. Four credits. (Not given 1942-43.) *Daines*

Secretarial Science

P. E. PETERSON, *Professor;* L. MARK NEUBERGER, *Assistant Professor;* INA DOTY, CLARA P. WEST, *Instructors.*

The outline of courses given below is suggested to students desiring to major in Secretarial Science. The specific courses listed must be taken. Where only departments are suggested it indicates that the student has a choice of any course within the department designated that will fulfill the general requirements for the B.S. degree.

It is suggested that minors be chosen in fields closely related to Secretarial Science: Accounting, Business Administration, Economics, Political Science, Sociology, and English.

CURRICULUM IN SECRETARIAL SCIENCE FOR B.S. DEGREE

Freshman

Course	Dept.	Credit
Biological Science		5
Burroughs Calculator 94	Sec. Sc.	2
Business Communications 30	Sec. Sc.	3
†Economics 51	Econ.	5
Electives		3
El. Stenography 75, 76, 77	Sec. Sc.	9
Exact Science		5
Introductory Accounting 1, 2	B. A.	10
Mechanics of Writing 2	Eng.	3
P. E. or M. S.		3
Total		48

Sophomore

Course	Dept.	Credit
Advanced Typewriting 89, 90, 91	Sec. Sc.	3
Intermediate Stenography 80, 81, 82	Sec. Sc.	9
Business Administration 25	B. A.	5
Biological Science		5
Commercial and Bank Posting 98	Sec. Sc.	2
†Economics 52	Econ.	5
Electives		3
Exact Science		5
Indexing and Filing 65	Sec. Sc.	3
P. E. or M. S.		3
Sophomore Composition 10 or 11	Eng.	5
Total		48

Junior

Course	Dept.	Credit
Accounting 100 or 101	B. A.	3
Advanced Speed Course in Gregg 183, 184, 185	Sec. Sc.	9
Advanced Composition 110	Eng.	4
Electives or Minor Work		23
*Methods of Teaching Typewriting 179	Sec. Sc.	3
Scientific Vocabulary 5	Eng.	3
Total		45

Senior

Course	Dept.	Credit
Business Adminstration (Senior College)	B. A.	5
Business and Professional Ethics 136	B. A.	2
Economics (Senior College)	Econ.	3
Electives or Minor Work		22
Office Management 175	Sec. Sc.	3
Secretarial Science 186, 187	Sec. Sc.	6
Seminar in Business Education 190	Sec. Sc.	1
*The Teaching of Stenography 180	Sec. Sc.	3
Total		45

†These courses count toward filling the group requirements.

*Required for a teaching certificate.

SCHOOL OF COMMERCE

If one wishes a teaching certificate in Secretarial Science, the following courses are required in addition to the above: Psychology 3 and 102; Education 111, 114 (Junior Year). Education 127, 128, 129, 113 (Senior Year); Health Education 108; See School of Education for additional requirements.

A two-year course is also offered in Secretarial Science for students who do not wish to qualify for a B.S. degree, but who wish to fit themselves for stenographic positions as quickly as possible.

TWO-YEAR COURSE

First Year

Fall		Winter		Spring	
Biol. Science	5	Accounting 1	5	Accounting 2	5
Mechanics of Writing	3	Office Appliances	2	Bus. Communications	3
El. Stenography	3	El. Stenography	3	Office Appliances	2
Typewriting	1	Typewriting	1	El. Stenography	3
P. E. or M. S.	1	El. Psychology	5	Typewriting	1
Electives	3	P. E. or M. S.	1	P. E. or M. S.	1
Total	16	Total	17	Total	15

Second Year

Fall		Winter		Spring	
Int. Stenography	3	Int. Stenography	3	Sophomore Comp.	5
Adv. Typewriting	1	Adv. Typewriting	1	Int. Stenography	3
Bus. Administr'n 25	5	Economics 51	5	Adv. Typewriting	1
Indexing and Filing	3	Transcription Prac.	1	Economics 52	5
Pol. Science 11	3	Pol. Science 12	3	P. E. or M. S.	1
Transcription Prac.	1	P. E. or M. S.	1	Transcription Prac.	1
P. E. or M. S.	1	Electives	2	Total	16
Total	17	Total	16		

30. Business Communications. This course aims to give the student the fundamental principles of business communications. Abundant opportunity is given for the solving of business problems by means of the business letter. The following types of letters will be studied: sales, credit, collection, adjustment, good-will, follow-up, form letters, and applications. Daily-transaction messages will be analyzed—announcements, appointments, inquiries, orders, remittances, acknowledgments, telegrams, cablegrams, and foreign correspondence. Three credits. Fall, M. W. F. 10. Winter, M. W. F. 9. Spring, M. W. F. 10. *Neuberger*

65. Indexing and Filing. Classifying and filing of business information has become a profession requiring special training. The mere safe-keeping of business records is not sufficient to make them of value. They must be kept so as to be quickly available, and classified in such forms as to be a dependable help to the various branches of the business. Principles will be studied and thorough practice given on all principle filing systems: Alphabetic, Numeric, Geographic. The indexing, coding and filing of letters, cards, blueprints, catalogs and other business forms will be emphasized. (Not open to freshmen.) Three credits. Fall and Winter, M. W. F. 11. Spring, M. W. F. 9. *Neuberger*

***69, 70, 71. Transcription Practice.** This course is designed to develop skill and speed in the transcription of letters from shorthand notes, through the fusion of the three skills—shorthand, typewriting, and English. Practice will be given in reading shorthand notes; spelling, punctuation, paragraphing, and the many details of typographical style that go to make up the well-typed letter; and at the same time to operate the typewriter rapidly and accurately.

*Required of all who register for Intermediate Stenography 80, 81, 82.

Prerequisites: Student must be able to take shorthand dictation at not less than 60 words per minute, type not less than 30 words per minute. One credit each quarter. Fall, Winter, and Spring, T. Th. 12. *West and Doty*

75. First Quarter Stenography. This course is designed for students who have had no previous training in shorthand, and includes a study of the fundamentals of shorthand by the Functional method. Emphasis will be placed on developing fluency in reading and writing from shorthand plates. Three credits. Fall, Daily 10, 11. Winter, Daily 9. *West and Doty*

76. Second Quarter Stenography. Continuation of course 75. Emphasis will be placed on writing shorthand. Three credits. Winter, Daily 10, and 11. Spring, Daily 9. *West and Doty*

77. Third Quarter Stenography. Continuation of course 76. Practice will be given in new-matter dictation. Three credits. Fall, Daily 9. Spring, Daily 10 or 11. *West and Doty*

80, 81, 82. Intermediate Stenography. This course is designed for students who have had one year of shorthand at this institution or elsewhere. It includes: A review of the theory of Gregg shorthand with the development of new vocabulary and phrase writing; the study of letter forms and arrangements; transcripts. Special attention will be directed toward the attainment of speed in taking dictation, together with the making of mailable transcripts.

Students must be able to take ungraded dictation at not less than 60 words per minute, must have had two years of typewriting or be registered in a course of advanced typewriting simultaneously with this course, and must also register for Transcription Practice 69, 70, and 71. Three credits each quarter. Fall, Winter, and Spring, M. W. F. 10 or 2. *West and Doty*

86. First Quarter Typewriting. For students who have had no previous training in typewriting. This course is designed to develop correct technique in: Position, Syllable, Word and Sentence drills; Stroke Rhythm, Number and Shifting drills; Mechanical Features; Mastery of Keyboard, Introduction of "Time" writing. One credit. Fall, Section 1, T. Th. 8, W. 1; Section 2, T. Th. 10, W. 1. Winter, T. Th. 2, W. 1. Spring, T. Th. 8, W. 12. *Doty and West*

87. Second Quarter Typewriting. Continuation of course 86. Attention will be given to centering; setting-up copy; frequency, phrase and word combination drills; sentence and paragraph practice; analysis of errors; introduction to letter writing. One credit. Fall, T. Th. 2, M. 1. Winter, T. Th. 8, M. 12 or M. W. 2, F. 8. Spring, T. Th. 2, W. 1. *Neuberger, West and Doty*

88. Third Quarter Typewriting. This course continues with the advanced development of the features given in 86 and 87, and in addition includes: letter writing, stressing placement, essentials, styles, tabulating; post cards and outlines. One credit. Winter, T. Th. 9. Spring, T. Th. 11. *Neuberger and West*

89, 90, 91. Advanced Business Typewriting. This course is designed for students who have had one year of typewriting at this institution or elsewhere. **Fall Quarter:** Special attention will be given to the development of accuracy; advanced letter writing; telegrams; invoices and billing; advanced tabulation. **Winter Quarter:** Continuance of concentration, acceleration, rhythm and corrective drills; advanced legal forms, preparation of a correspondence guide; speed and accuracy tests. **Spring Quarter:** Attention will be given to the development of speed; review of machine and short-cuts in typewriting; rough draft work; advanced secretarial problems, care of the machine.

Students must arrange for three hours' practice a week in addition to the regular class hours. One credit each quarter. Fall, T. Th. 9 or 11. Winter, T. Th. 11. Spring, T. Th. 9. *Neuberger*

94. Burroughs Calculator. a. Instruction and practice in addition, multiplication, subtraction, accumulation, and fixed decimal point work by the use of the Burrough Calculating Machines.

b. Applications of the Burroughs Calculating Machines to various business computations such as division, percentages, chain discounts, prorating, decimal equivalents, constants, and inventories. Two credits. Fall, Winter, or Spring, Section 1, M. 2-4, W. 2; Section 2, T. 2-4, Th. 2. *Neuberger and Doty*

98. Commercial and Bank Posting. a. Instruction and practice in the application of Burroughs Posting Machines to bookkeeping procedure in commercial institutions including: Prelisting of items, proving of accounts; setting up control accounts; keeping a set of books for one month.

b. Instruction and practice in the application of Burroughs Posting Machines to bookkeeping procedures in banks and financial institutions. Two credits. Fall, Winter or Spring, M. or T. or W., or Th. 2-5.
Neuberger and Doty

175. Office Management. This course is designed to familiarize students with the practical principles of office management. The problems which confront the small, as well as the large office, are discussed and the possible solutions analyzed. Extensive reading in the field of office management is encouraged and required. Attention will be given to the following: Scientific Office Management; duties and responsibilities of the office manager; types of organization; establishment of routines; methods of control; office manuals; job analysis; employment and selection; employee training, services in the office; office arrangement and equipment. Prerequisites, Introductory Accounting and General Economics. Required of all majors in Secretarial Science. Three credits. Fall, M. W. F. 9. *Neuberger*

***179. Methods of Teaching Typewriting.** A study of recent developments and practices in the teaching of typewriting. An analysis will be made of recent studies and experiments with a view to discovering problems and possible solutions. A course for those preparing to teach typewriting and for those engaged in teaching, who wish to render their teaching more effective. Three credits. Winter, M. W. F. 9. (Not given 1942-43.) *Neuberger*

***180. The Teaching of Stenography.** A study of the newer methods and trends in the teaching of stenography and observation and practice in the teaching of shorthand classes. It includes a study of the laws of learning, objectives in teaching shorthand, organization of materials, and standards of achievement. A course for those preparing to teach stenography and for those engaged in teaching who wish to render their teaching more effective. Three credits. Fall, M. W. F. 8. (Consult instructor before registering.) *West*

183, 184, 185. Advanced Speed Course in Stenography. This course is designed for students who have had the first two years of shorthand. Attention will be paid to reporting short-cuts and speed phrases. This work is designed to give the student intensive drill in order to prepare him for reporting work. Students must be able to take dictation at not less than 100 words a minute to enter this course. Three credits each quarter. Fall, Winter and Spring, M. W. F. 11. *West*

186, 187. Secretarial Science. This course is designed to give the student intensive drill for the attainment of a high rate of speed in shorthand and practice in the quantity production of transcripts and routines; mental, moral and physical characteristics necessary to the successful office worker; the business organization; and how to to apply for positions in person and by letter; spelling, punctuation, and word usage.

Prerequisites, Two years of Shorthand and Typewriting, Elementary Psychology, General Economics, Introductory Accounting, Business Communications, and Business Office Practice. Three credits each quarter. Winter and Spring, M. W. F. 8. *West*

190. Seminar in Business Education. Special reports on current business education problems and literature will be made. One credit. Winter, Th. 10.
Neuberger

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*Either (but not both) of these courses may be used as an elective course in Education.

Sociology

JOSEPH A. GEDDES, W. B. PRESTON, C. L. ANDERSON, *Professors;* JOSEPH N. SYMONS, EVELYN HODGES, *Assistant Professors;* REX SKIDMORE, ELDRED BERGESON, LEAH BRUNK, *Instructors;* H. H. RAMSEY, *Special Lecturer.*

Departmental Objectives:

1. To perform an integrative function. Scientific information on social living has gradually become segregated into separate disciplines known as the social sciences. Each of these sciences at times, and one of them as a normal responsibility, faces the task of integrating the contributions of the others. Sociology, because of the nature of its subject matter, has come to be looked upon generally as having major integrative responsibility. This responsibility is met by offering such courses as Modern Social Problems, Rural Sociology, etc.

2. To provide for students who become majors, and as many other future citizens as may be interested, the steadily accumulating, tested, basic information dealing with people and groups in relationship. The most basic of this information is found in the following courses: Principles of Sociology, Rural Sociology, Social Change, The Family, The Crime Problem.

3. To offer to majors and minors and others whose training warrants; further information and experience, under supervision, in special fields pertaining to relationship. The special fields thus far selected for development by the Sociology Department have been chosen because of their importance to the people of the state, and particularly to future citizenry. The fields are (1) General Sociology, including research, (2) Family Welfare, (3) Social Change, and Social Disorganization, (4) Rural Welfare, Community Life and Social Institutions.

A dominant purpose in providing the information indicated in 1 and 2 is to enable students to become socialized citizens; to aid them to make more satisfactory progress in personality development and to assist them to achieve balance in attitude, in participation and in philospohy of living.

4. Objectives in the Division of Social Work are practical in nature. The aim is to provide in one year of graduate study as much training as is possible to aid students in achieving mastery of the basic fundamentals of social work, and to qualify them for positions as social workers. The aim includes also, professional training on the under-graduate level through which a knowledge of rural conditions is secured. This information includes studies of rural standards of living, rural housing, rural means of communication, rural taxation, agricultural prices, rural institutions, rural trends, etc.

Sociology 70 is prerequisite for all Upper Division courses in Sociology.

Students majoring in this department may emphasize any of the four fields listed below.

Nuclei courses about which the major and the special group courses should revolve are suggested, as follows:

General Sociology and Research—Sociology 70, 140, 153, 190, 191, 192, 193, 194, 195, 202, 207.

Family Welfare—Sociology 71, 150, 162.

Social Change and Social Disorganization—Sociology 52, 102, 147, 154, 162, 165, 170, 172, 207.

Rural Welfare, Community Life and Social Institutions—Sociology 10, 156, 214, 220, 222, 240, 275.

5. Social Change. An orientation course in the field of Sociology for freshmen. Social changes are studied in relation to their results. Adjustment to and management of change are considered. Five credits. Fall, Daily 11.
Skidmore

10. Rural Sociology. This course attempts to provide a groundwork of information which will lead to enlightened rural citizenship and provide a constructive philosophy for living in the country. Concise digests of programs in 25 or more fields are made. Rural social psychology is given emphasis. Conditions in rural Utah are studied. Three credits. Fall, M. W. F. 10; Winter, M. W. F. 8; Spring, M. W. F. 9. *Skidmore and Bergeson*

52. The Crime Problem. This course is concerned with the broader aspects of crime as a serious contemporary problem. Such topics as the extent, nature, causes of, theories concerning, techniques for coping with, programs for prevention, etc., furnish the course content. Three credits. Winter, M. W. F. 8. *Skidmore*

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. Five credits. Fall, Daily 8, 10. Winter, Daily 9, 11. Spring, Daily 8, 10. *Skidmore and Bergeson*

71. The Family. Interaction, functions, and organization of the family. Courtship and marriage interaction. Family tensions and disorganization. Three credits. Fall, M. W. F. 8. Spring, M. W. F. 11. *Skidmore*

100. Educational Sociology. This course deals with the influence of the social processes and social changes on school curricula, objectives and teachers. It includes an appraisal of educational goals in the light of our present social needs. Three credits. Spring, T. Th. 10; W. 12. *Skidmore*

102. Organized Crime. Criminal behavior is becoming more thoroughly organized. The professional offender finds himself after a time in a culture unique to him and his associates. The nature of this culture from early brigandage to the present will be treated. Three credits. (Not given 1942-43.) *Symons*

Public Opinion. (See Political Science 124.)

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. Five credits. Fall, Daily 8. *Geddes*

Mental Hygiene. (See Physiology 145.)

150. Environmental Factors in Child Life. Home conditions are dealt with briefly in this course in natural and adopted homes. The principal emphasis is on community influences and pressures which assist in the development of the personality. Field trips will supplement lectures as a means of coming into contact with societies, organized agencies, and institutions. Three credits. Winter, M. W. F. 11. *Hodges*

153. History of Social Thought. The emergency and development of social thought from early periods is traced to August Compte From this point, important developments in Europe and America are studied. Particular emphasis is given to the American field. Five credits. (Not given 1942-43.) *Symons*

154. Population Problems. Study of distribution, characteristics, and trends in the population. Special attention will be given to an analysis of the Utah population. Three credits. (Not given 1942-43.) *Skidmore*

156. Social Institutions. Similarities and differences in the life histories of institutions as they emerge, grow and decline are appraised. Society's efforts to keep institutions attuned to the objectives for which they were organized are observed. Three credits. (Not given 1942-43.) *Skidmore*

162. Marriage and Divorce. A discussion of the problems of marriage and divorce. A survey of present conditions. Three credits. Winter, M. W. F. 10. *Bergeson*

170. Juvenile Delinquency. 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. Three credits. (Not given 1942-43.) *Symons*

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. Three credits. (Not given 1942-43.)

190, 191, 192, 193, 194, 195. Seminar in Sociology. One credit each quarter. Fall, Winter, and Spring. Time arranged. Six quarters required of majors in Sociology. *Staff*

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, Soc. 70; Math. 111 recommended. Fall, Winter, Spring. Time arranged. *Staff*

202. The Study of Society. An advanced course in Sociological theory. Sociology is studied as a classified body of facts and as a method of investigation. (Not given 1942-43.) *Geddes*

207. Graduate Seminar. In this course, short subjects falling within the field of Sociology and pertinent to it but not available in regular courses are selected for study. Two credits. (Not given 1942-43.) *Symons*

220. Rural Organization. A study of social organization in small towns, villages and open country. Required for students training for rural social work. Two credits. Spring, M. 3-5. *Geddes*

Graduate Division of Social Work.

JOSEPH A. GEDDES, *Director*

Students are admitted to the Graduate Division of Social Work: (1) who are graduates of an accredited college or university; (2) who have a well balanced background of training in political science, economics, psychology, and sociology; (3) who have not less than 30 hours in one of the four fields listed above; (4) who have personal qualifications which give promise of fitting them for social work practice; and (5) who are under 35 years of age. Students over 35 may be admitted whose work has been in closely related fields and who are otherwise well fitted for social work.

Students enter the graduate Division after having completed a major in economics, psychology, political science, or sociology. Students majoring in child development, physical education, or public health, who have accumulated 25 hours in one of the four social sciences listed above, may also be admitted, provided they have a fair balance in the social sciences. In addition to the technical social work courses, some rural welfare backgrounds are necessary. Training involves one year of graduate work designed to provide practical acquaintance with the methods, techniques and problems of social work. Supervised field work under competent direction is given as a part of the regular required work. A certificate in social work is awarded to those who complete 45 hours in social work and who have also taken Rural Sociology, Rural Organization, Marriage and Divorce, and Mental Hygiene.

For detailed information write to the Director for a bulletin of the Graduate Division of Social Work.

173. The Field of Social Work. A survey of the development of the various fields of social work. This course is designed for students entering the fields of teaching, home demonstration, county agents' work, as well as social work. Two credits. Fall, M. W. 10. *Hodges*

200. Principles of Social Case Work I. Principles and methods of modern family case work. Investigation, diagnosis and treatment of economic, medical and conduct problems are studied. Three credits. Fall, M. W. F. 9. *Bergeson*

201. Principles of Social Case Work II. A continuation of S. W. 200. Interviewing, recording and treatment are stressed. Three credits. Winter, M. W. F. 9. *Bergeson*

205. Case Analysis. The case material used in discussion is selected from records and field experience to present as wide a variety of problems as possible. Prerequisite, S. W. 173, 200, 201. Two credits. (Not given 1942-43.)

210. Field Work I. Field work centers will be maintained in selected public and private agencies and supervision will be provided under college direction. S. W. 200 should precede or be taken concurrently. Two or four credits. Fall, Winter, or Spring, T. Th. 9-5. *Hodges*

211. Field Work II. A continuation of Field Work I. Two or four credits. Fall, Winter or Spring, T. Th. 9-5. *Hodges*

212. Field Work III. A continuation of Field Work II. S. W. 200, 201 are prerequisites. Two or four credits. Fall, Winter, or Spring, T. Th. 9-5. *Hodges and Bergeson*

214. Field Work in Group Work. A limited amount of leadership training andn observation of groups in action is available to students who have completed Social Work 275. Two credits. Spring. Time arranged. *Bergeson*

222. Rural Public Welfare. A study of social work problems and methods as influenced by rural conditions. Two credits. Spring, M. 3-5. *Bergeson*

230. Social Psychiatry. Emotional and intellectual factors in adjustment problems; diagnosis of mental and nervous disorders; the interrelation of physical, emotional, mental and environmental factors are stressed. Three credits. Fall, M. 11; W. 11, 1. *Ramsay and Anderson*

240. Community Organization. The growth of the community movement is traced. The organization of community forces into organized agencies and the development of communal programs is emphasized. Disorganizing factors are isolated . Three credits. Spring, M. W. F. 8. *Geddes*

250. Public Welfare Administration. A study of the history and methods of public welfare administration in state and county public welfare activities. Three credits. Fall, M. W. F. 2. *Bergeson*

260. Medical Information. A study of diseases most frequently encountered in social work. The interrelations of disease and social conditions are appraised. Medical resources are considered. Open to social work students in the senior year. Three credits. Winter, M. W. F. 12. *Preston*

270. Child Welfare. A course dealing with the problems of case work in children's agencies. Special study is made of the procedure used in the case of dependent, neglected, and handicapped children. Three credits. Winter, M. W. F. 11. *Hodges*

272. Foster Home Care and Placement of Children. A course dealing with principles and methods of placement and supervision of children in foster homes. Three credits. (Not given 1942-43.) *Hodges*

275. Principles of Social Group Work. Principles of group participation. Principles of leadership and followership. Personality adjustments and therapeutic values in social group work. Two credits. Winter, M. 2-4. *Bergeson*

276. Contemporary Social Work Literature. This course attempts to review the current contributions to the various fields of social work literature as well as to acquaint the student with the character of the periodical literature that has been published during the previous year. Two credits. (Not given 1942-43.)

277. Child Welfare in the Schools. Analysis, investigation, and treatment of the problems of school children. Two credits. (Not given 1942-43.) *Hodges*

278. Social Legislation. A study of the problems in the enactment of legislation related to Public Welfare. Problems connected with draftsmanship, sponsorship and promotion of social legislation will be considered. Two credits. (Not given 1942-43.) *Daines*

290. Methods of 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 70. Three credits. Fall, M. W. F. 3. *Geddes*

295, 296. Seminar in Social Work. For advanced students in the Division of Social Work. Newer trends are considered in interviewing, recording, and treatment in the case Work Field. One or two credits. Winter and Spring, time arranged. *Staff*

SUGGESTED PRE-PROFESSIONAL COURSES FOR ECONOMICS MAJORS WHO EXPECT TO TAKE GRADUATE TRAINING IN SOCIAL WORK

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Sociology 5 or Amer. Govt. 10a	5	Art Und. and App. 3	3	Gen. Bact. 1	5
Eco. Res. of U. S. 25	3	Rural Soc. 10	3	Ele. Botany 12	5
Col. Algebra 35	3	Physiology 4	5	Gen. Farm Crops 1	3
Home Hyg. and Care of Sick 25	2	Ele. Psycology 3	5	or	
or		Ec. Geog. of W. 26	3	Prin. of Nut. 5	5
Intro. to An. Hus. 1	3				
Recreative Games 63	1				
M. for Y. Child. 38	1				
Elective	2				

Sophomore

Child Guid. 60	5	Gen. Econ. 51	5	Adv. Gen. Econ. 52	5
Geology 1	5	Meal Prep. and Serv. 9	3	Ele. of Land. Arch.	3
Prin. of Soc. 70	5	or		Farm Accounts 70	3
Nature and Function of Play 80	2	Intro. An. Hus. 1	3	or	
Elective	1	Amer. Lit. 52	5	Con. Edu. 50	3
		Soph. Comp. 10	5	Story Telling 18	5
				Elective	3

Junior

Edu. Psy. 102a	4	City and Com. Planning 110	3	Mothercraft 70	3
Edu. Psy. 102b	1	Econ. of House. Con. and Pro. 149	3	or	
Prin. and Prob. of Govt. 103	3	Mental Hyg. 145	3	Prin. Farm Man. 102	3
Pub. H. and Hyg. 108	5	Crime Prob. 52	3	Fun. of Family Cl. 55	3
Business Cycles 171	3	Elective	3	Com. Health Prob. 109	3
Labor Econ. 125	3			Statistics 111	5
				Elective	2

Senior

Adv. Eng. Comp. 110 . 4	Occ. and V. Guid. 113 . 3	P. and Com. Rec. 83 . . 4
F. of Soc. Work 173 . . 2	Public Opinion 124 . . . 3	Child Guid. II-137 . . . 4
Hist. of Ec. Doc. 106 . 3	or	or
Elective 7	Ag. Econ. 113a 3	L. Ec. and Ut. 106 . . . 5
	Child Guid. I-60 3	Adv. Econ. Th. 107b . . 3
	or	Psy. 103b 2
	Social Security 147 . . 3	
	Children's Lit. 4	
	Adv. Eco. Th. 107a . . . 3	
	Psy. 103a 5	

SUGGESTED PRE-PROFESSIONAL COURSES FOR POLITICAL SCIENCE MAJORS WHO EXPECT TO TAKE GRADUATE TRAINING IN SOCIAL WORK

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Amer. Govt. 10a	5	Art. Und. and App. 3 .	3	Gen. Bact. 1	5
Rural Soc. 10	3	Physiology 4	5	Ele. Botany 12	5
Col. Algebra 3	3	Prin. of Nut. 5	5	Gen. Farm Crops 1 . . .	3
Home Hyg. and Care of Sick 25 . .	2	Comp. Govt. 70	3	Ele. Psychology 3	5
Elective	3 or 5			Elective	2

Sophomore

Gen. Econ. 53a 3	Child Guid. I-60 3	Adv. Econ. 53b 5
Geology 1 5	Meal Prep. and Serv. . 3	Consumers Edu. 3
Prin. of Soc. 70 5	Intro. An. Hus. 1 3	Farm Accounts 70 . . . 3
Elective 2	Amer. Lit. 52 5	Ele. of Land. Arch. . . . 3
	Soph. Comp. 5	Elective . . . . . 2 or 3
		Lit. (lower div.) 5

Junior

Edu. Psy. 102a 4	App. of Statistics to Edu. 102b 1	Mothercraft 70 3
Prin. and Prob. of Govt. 103 3	City and Com. Planning 110 3	or
Pub. H. and Hyg. 108 . 5	Econ. of House. Cons. and Pro. 149 3	Prin. Farm Man. 102 . 3
Pol. Parties 3	Mental Hygiene 3	Com. Health Prob. 109 3
	Elective 7	Fund. of Family Cl. . . 3
	Public Opinion 124 . . . 3	Pub. Adm. 129 3
		Elective 3

Senior

Adv. Eng. Comp. 110 . 4	Occ. and V. Guid. 113 . 3	Child. Lit. 24 4
Const. Law 127 3	Public Opinion 3	or
Elective 9	Inter. Pol. Rela. 102 . . 3	Ag. Econ. 113 3
	Const. Law 128 3	L. Ec. and L. Ut. 106 . 5
	Psy. 103a 5	Amer. For. Policy 101 3
		Theory of State 116 . . 3
		State Govt. and Adm. 130 2
		Psy. 103b 2

SUGGESTED PRE-PROFESSIONAL COURSES FOR PSYCHOLOGY MAJORS WHO EXPECT TO TAKE GRADUATE TRAINING IN SOCIAL WORK

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Amer. Govt. 10a	5	Art. Und. and App. 3	3	Gen. Bact. 1	5
or		Ele. Psy. 3	5	Ele. Botany 12	5
Soc. 5	5	Physiology 4	5	Gen. Farm Crops 1	4
Rural Soc. 10	3	Prin. of Nut. 5	5	or	
Col. Algebra 35	3	Elective	3 or 5	Child. Lit. 24	4
Home Hyg. and Care of Sick 25	2			Elective	2
or					
Intro. to An. Hus. 1	3				
Music for Y. Child. 38	1				
Recreative Games 63	1				
Elective	2				

Sophomore

Gen. Econ. 53a	3	Child Guid. I-60	3	Adv. Gen. Econ. 53b	3
Geology 1	5	Meal Prep. and Serv. 9	3	Consumers Edu. 50	3
Prin. of Soc. 70	5	or		or	
Nature and Function of Play 80	2	Intro. An. Hus. 1	3	Farm Accounts 70	3
Elective	1	Story Telling 18	5	Ele. of Land. Arch.	3
		Soph. Comp. 10	5	Amer. Lit.	5

Junior

Edu. Psy. 102a	4	App. of Statistics to Edu. 102b	1	Clin. Psy. 103b	2
Prin. and Prob. of Govt. 103	3	City and Com. Planning 110	3	Mothercraft 70	3
Pub. H. and Hyg. 108	5	or		or	
Soc. 140	5	Econ. of House. Con. and Pro. 149	3	Prin. Farm Man. 102	3
		Mental Hyg. 145	3	Com. Health Prob. 109	3
		Art for Y. Child. 34	2	or	
		Clin. Psy. 103a	5	Fun. of Family Cl. 55	3
				Elective	5

Senior

Adv. Eng. Comp. 110	4	Occ. and V. Guid. 113	3	P. and Com. Rec. 83	4
Child. Psy. 110 and Reading 205a	2	Public Opinion 124	3	or	
Abnormal Psy. 140	3	Public Adm. 129	3	Ag. Econ. 113	3
Elective	6	or		Child Care and Guidance II 137	4
		Statistics 111	5	L. Ec. and Ut. 106	5
		Child Guidance I-60	3	Social Sec. 147	3
		Psy. 205b	2	Psy. of Learn. 107	3
				Psy. 205c	2

SUGGESTED PRE-PROFESSIONAL COURSES FOR SOCIOLOGY MAJORS WHO EXPECT TO TAKE GRADUATE TRAINING IN SOCIAL WORK

Freshman

Fall		Winter		Spring	
Courses	Credit	Courses	Credit	Courses	Credit
Soc. 5	5	Art Und. and App. 3	3	Gen. Bact. 1	5
or		Ele. Psy. 3	5	Ele. Botany 12	5
Amer. Govt. 10a	5	Physiology 4	5	Gen. Farm Crops 1	5
Rural Soc. 10	3	Prin. of Nut. 5	5	or	
Col. Algebra 35	3	Elective	3 or 5	Child. Lit. 24	4
Home Hyg. and Care of Sick 25	2			Elective	2
or					
Int. to An. Hus. 1	3				
M. for Y. Child. 38	1				
Recreative Fames 63	1				
Elective	2				

Sophomore

Gen. Econ. 53a	5	Child Guid. 60	5	Adv. Econ. 53b	3
Geology 1	5	Meal Prep. and Serv. 9	3	Ele. of Land. Arch.	3
Prin. of Soc. 70	5	or		Con. Edu. 50	3
Nature and Function of Play 80	2	Int. An. Hus. 1	3	or	
Elective	1	Story Telling 18	5	Farm Accounts 70	3
		Soph. Comp. 10	5	Amer. Lit.	5
				Elective	3

Junior

Edu. Psy. 102a	4	App. of Sta. to Edu. 102b	1	Mothercraft 70	3
Edu. Psy. 102b	1	City and Com. Planning 110	3	or	
Prin. and Prob. of Govt. 103	3	Econ. of House Con. and Prod. 149	3	Prin. Farm Man. 102	3
Pub. H. and Hyg. 108	5	or		Com. Health Prob. 109	3
		Mental Hyg. 145	3	Fun. of Family Cl. 55	3
		Art for Y. Child. 34	2	Elective	5
		Labor Econ. 125	5		
		Crime Prob. 52	3		

Senior

Adv. Eng. Comp. 110	4	Occ. and V. Guid. 113	3	P. and Com. Rec. 83	4
Soc. Psychology 140	5	Public Opinion 124	3	or	
F. of Soc. Work 173	2	Pub. Adm. 129	3	Ag. Econ. 113	3
Elective	5	or		Child Care and Training II 136	3
		Statistics 111	5	or	
		Child Care and Training I 135	3	L. Ec. and L. Ut. 106	5
		Psy. 103a	5	Soc. Sec. 147	3
				Soc. 100	3
				Psy. 103b	2

SCHOOL OF EDUCATION

E. A. JACOBSEN, *Dean*

Departments

Art 171

Education 174

Elementary Education 174

Secondary Education 176

Vocational Education 178

Administration and Supervision 179

Library Science 179

Special Problems and Methods 180

Graduate Work 181

Music 182

Physical Education 186

Psychology 191

General Information

THE School of Education, as an administrative unit of the College, comprises the departments of Art, Music, Psychology, Physical Education and Education. A major function of these departments is the preparation of teachers for the elementary and secondary schools. Each of the departments, in addition to this function, offers courses contributing to general education and courses designed to supplement the major work of other departments of the College.

The Bachelor of Science degree with a major in Education is designed primarily for those students who are preparing to teach in elementary schools, or for those who desire to meet requirements for administrative or supervisory credentials. Although provision is made for a major in secondary education, students preparing to teach in the secondary schools will usually find it advisable to take their Bachelor's degree in the particular school in which their major work is chosen. Arrangements have been made with the different schools of the College to provide the candidates for their respective degrees with the necessary professional courses to qualify them to teach in these fields. Requirements for a teaching major are set forth by the various departments.

For teachers in junior and senior high schools it is intended that the student shall be prepared to teach in two high school teaching fields. The student's mastery of essential subject matter in the teaching field, rather than the credit hours, should operate in determining subject matter proficiency. The School of Education stands firmly on the principle that teachers must not only be liberally educated but must be thoroughly prepared in the subjects which they are to teach. Teaching fields should be chosen by the student on basis of his individual abilities and interests and also in the light of available information concerning the demands for beginning teachers and the supply in the respective fields. The curriculum in professional education and psychology aims to impart to prospective teachers the meaning of education in its relation to desirable social objectives, the organization and administration of schools in relation to the needs of the learner and to social aims, an understanding of the nature and needs of the learner and the learning process, and by means of certain technical courses in education, to develop skills in the art of teaching.

The sequence of professional courses in Psychology and Education is such that it is necessary to study in these fields before the final year. A detailed plan of study is not outlined or prescribed. The student who plans to prepare for teaching will usually find it advantageous to devote the first two years to securing a well-balanced general education, giving some attention to courses prerequisite to advanced study. During these years some emphasis may also be placed in the field of specialization. The third and fourth years should be devoted primarily to concentration in the major field of study and to professional subjects in Psychology and Education.

For requirements for admission, certification, and graduation, see pages 49 to 58.

TEACHER PLACEMENT BUREAU

Placement Committee: L. R. HUMPHERYS, *Chairman; Professor* JOHN C. CARLISLE; *Assistant Professor* FLORENCE THOMPSON. MRS. VERA A. CHRISTENSEN, *Secretary.*

The College is fundamentally interested in placing qualified teachers in teaching positions. To accomplish this purpose the Teacher Placement Bureau has been organized in connection with the Department of Education. All students who qualify for teaching certificates are expected and urged to register with the Placement Bureau to facilitate the compilation of the proper credentials to be used in placement for the current and future years.

Candidates for teaching positions should join the Placement Bureau in the early part of the winter quarter or not later than the first week of the spring quarter. The following procedure should be adopted by candidates:

1. Secure Placement Bureau registration card at the College Secretary's Office and pay $2 fee.
2. Procure application for certificate to teach at Education Office, M277.
3. Fill out these two forms and check with the Secretary of the Placement Bureau, M276, and get recommendation rating blanks.
4. Submit six of your photographs, size 2½"x3⅛", to the Placement Bureau with your name and address on the back of each.
5. Supply Placement Bureau with a copy of your spring quarter class schedule to assist in arranging interviews with school officials who come to the campus to employ teachers.
6. When a contract is signed or a position secured for the coming year, notify Placement Bureau at once. Also give notice when changing position from one school to another, or when leaving the profession. This procedure serves your best interests.

An additional fee of $1 will be charged teachers for renewal of Placement service.

Art

CALVIN FLETCHER, *Professor;* H. R. REYNOLDS, *Associate Professor;* EVERETT THORPE, JESSIE LARSEN, *Instructors.*

MAJORS:

Teaching majors must complete Art 1, 2, 31, 32, 133, 122, 123, 124, 125, 126, 127, 151, 110 (four credits), 104 (ten credits), 106 (three credits), 114 (four credits), 112 or 113 (three credits).

Majors in the following fields may be elected on the following conditions: They must show aptitude for the field and submit at least 30 hours of credit in the field in addition to Art 1, 2, 3, or 32, 133, 126, 127, 124, and 125. Fields open for election are Commercial Art, Costume, Illustration, Painting, Sculpture, General Illustration, Interior Decoration, Industrial Design, and Hobby Craft Direction.

MINORS:

Education majors in secondary education desiring an art teaching minor should take Art 1, 2, 3, 151, and five credits of 104. Also Art 33, 26, 127, 32, 123, 124, 125 would be highly desirable.

Textiles majors desiring a teaching minor in Art will take Art 1, 2, 3, 151, 122, 123, and 127, or equivalent.

Industrial Arts majors wishing a teaching minor in Art will take Art 1, 2, 3, 151, 127, and 124 or equivalent.

General teaching minors in Art on the secondary level with majors in English, music, physical education, history, etc., should take Art 1, 2, 3, 151, 104 A and B (2 credits in each), and 106 (two credits).

Majors in Elementary Education who elect Art as a specialization field should take Art 51, 52, Art 104 (five credits), Art 3 and Art 106 (two credits). It is also highly desirable that they also elect Art 31, 32, 133, 126 if time permits.

Two year full time specialization or trade courses in Show Card and Sign Writing, Costume and Commercial Illustration, Painting and Sculpture are also available. Students wishing such courses should consult the head of the department.

1. Elementary Design and Nature Appreciation. Creative experience with color, pattern, texture, as found in nature and various forms of flat surface pattern. Three credits. Fall, T. Th. 8, M. 12; M. W. F. 9; or M. W. F. 2. Winter, M. W. F. 11, or Spring, M. W. F. 2. Section 2, Fall, M. W. F. at 9 will give special attention to industrial art students but will be open to all.
Reynolds, Thorpe, and Larsen

2. Design and Color. Color classification and theory of harmonics, and application of design principles in everyday life. All designs are to be applicable to industry and the crafts. Prerequisites Art 1 or equivalent. Three credits. Winter, T. Th. 8, M. 12 or M. W. F. 9 or M. W. F. 2. Spring, M. W. F. 10.
Reynolds, Thorpe, and Larsen

3. Art Understanding and Appreciation. Designed to give an understanding of the basic principles underlying architecture, landscape gardening, interior decoration, sculpture, painting, the art of the book, pottery and other things met in everyday life today. The aim is to increase enjoyment through the sense of sight. Three credits. Fall, M. W. F. 8. Winter, M. W. F. 8. Spring, T. Th. 8, M. 12 or M. W. F. 8. *Fletcher, Reynolds*

22 or 122 Home Planning, Construction and Design. House design, planning, garden planning, building construction, heating, lighting, plumbing, etc. How to select the type of house and supervise the construction and equipping of the home. Three credits. Winter, M. W. F. 10. *Fletcher*

23 or 123. Interior Decoration. Design and color as applied to the furnishing and decoration of a home. Selection and styles in furniture, drapery, rugs, and all other problems, relating to the creation of interiors of character and beauty will be considered. Five credits. Fall, M. T. W. Th. 1; Lab., F. 2-5. Spring, M. T. W. Th. 12; Lab., Th. 2-5. *Larsen*

26 or 126. History and Appreciation of Architecture. The characteristics of the great styles of building and the development of a taste for good architecture. Adapted to the needs of the homemaker, teacher, artist, or layman. Three credits. Winter, M. W. F. 2. *Thorpe*

31. Commercial Art and Posters. Design in advertising display, layout, lettering, etc. Three credits. Spring, M. W. F. 2. *Thorpe*

32. Color. Color as used in stage lighting, painting, design, and everyday life. Its physical, psychological, and artistic phases are correlated. Suited to the business man, layman, dramatist, artist, teacher, and painter alike. Three credits. Spring, M. W. F. 9. *Reynolds*

33 or 133. History and Appreciation of Painting. Designed for the layman desiring to extend his knowledge of the great painters as well as for the teachers of art and artists. Three credits. Spring, M. W. F. 11. *Reynolds*

34. Art for Young Children. Designed to meet the needs of child development majors, mothers in the home, kindergarten and first grade teachers. Normals should register for Art 51 and 52 to adequately prepare for elementary school teaching. Two credits. Winter, T. Th. 12. *Fletcher*

37. Principles of Industrial Design. Two credits. (Not given 1942-43.) (See Art 1, Sec. 2.)

38. Problems of Design. Two credits. (Not given 1942-43.) (See Art 2, Sec. 2.)

51. Drawing for Elementary Grades. Methods of teaching creative expressions, drawing, and painting in the grade schools. How to make art contribute to the social, aesthetic, and creative needs of the child. Should be taken by all who expect to teach in the grades. The integrated school program will be stressed. Three credits. Fall, M. W. F. 9. Winter, M. W. F. 8. Spring, M. W. F. 9. *Fletcher, Larsen*

52. Design and Handwork for Elementary Grades. Methods of teaching design and various creative handicrafts to elementary grade pupils. Basic

constructive processes, design and color applied in wood, metal, sewing, puppetry, basketry, ceramics, etc., will be taken up. Should be taken by all elementary teachers. Five credits. Fall, M. W. F. 10; Lab., T. Th. 9-12. Winter, M. W. F. 11; Lab., T. Th. 9-12. Spring, M. W. F. 8; Lab., T. Th. 8-11.
Reynolds and .....

124. Perspective. The principles of cylindrical, parallel, oblique and modernistic perspective as used in the arts will be covered. Special attention will be given to rendering in pencil and pen and ink. Three credits. Spring, M. W. F. 10. *Fletcher*

125. Anatomy and Figure Drawing. The anatomy and construction of the human figure with emphasis on superficial anatomy. Attention is given to the movement of the whole correlated with all the parts. Adapted to the needs of fashion artists, sculptors, painters, illustrators, commercial artists, and teachers. Fall, T. Th. 8; Lab., M. W. F. 10-12. Five credits.

127. Advanced Design. Advanced problems in design for crafts, industrial art, and mural decoration. Adapted to the needs of the teacher of applied art, textiles and industrial art on the secondary school level. Three credits. Winter, M. W. F. 11. *Fletcher*

129. Photography. Basic course for all who desire to do more efficient and artistic work. Three credits. Fall, T. Th. 9; Lab., T. Th. 10-12. *Reynolds*

151. Art Education for High School. Methods of teaching art on the secondary school level. How to motivate the work in drawing, painting, design, crafts, etc. Arrangement of the shop, studio, selection of tools, supplies, etc., are all taken up. Required of all majors and minors in art on this level. Five credits. Fall, M. W. F. 9; Lab., T. Th. 9-12. *Fletcher*

STUDIO COURSES:

Regular studio periods are set up in which instruction is given. Working hours are arranged within these periods. Three hours of work is required each week for each credit registered for. All courses are operated simultaneously unless otherwise specified. Any course may be repeated for additional credit but more advanced problems must be pursued. Work may be done on Junior or Senior college level. For graduate credit, see head of department. These courses are given senior college numbers but are open on application to junior college students.

Art 20. Puppetry. Designing and making puppets; construction of puppet stage. Credit arranged. Fall and Spring, M. W. 2-5. *Reynolds*

Art 104. Creative Expression. A, drawing; B, painting; C, illustration. After three credits of work are completed, students may specialize in any branch of drawing, painting, book illustration, costume illustration, or commercial illustration. Textile majors are allowed to begin with costume illustration if desired. Credit arranged. Fall, M. T. W. 2-5. Winter, M. T. W. and Th. 2-5. Spring, M. T. W. 2-5, or Daily 9-12. Morning, *Thorpe*, Afternoon, *Fletcher*

A sketch class to work out of doors is arranged for Thursday afternoons during the Fall and Spring quarters. All 4 or 104 students are eligible for this class. Fall, Th. 2-5. Spring, Th. 2-5. *Fletcher*

A special afternoon with animal drawing is arranged for Tuesday afternoons during the spring quarter. Tuesday 2-5. *Fletcher*

Art 105. Scientific Drawing, Painting. This work is coordinated with various scientific departments: A, Botanical; B, Zoological; C, Geological. Instructors in the science departments concerned may direct the content of the work done if desired. Credit arranged. Any quarter, M. T. W. 2-5. *Fletcher*

Art 105. Creative Sculpture. A, carving in stone; B, carving in wood; C, modeling and casting. Credit arranged. Any quarter, M. T. W. Th. 2-5.
Fletcher

Art 110. Lettering and Commercial Art. A, show card writing; B, window sign and gold leaf; C, illumination and manuscript lettering. Daily, arranged between 9 and 12 A. M. or 2 and 5 P. M. Any quarter. Credit arranged. Morning, *Thorpe,* Afternoon, *Fletcher or Reynolds*

Art 111. Professional Design. A, textile and wallpaper; B, interior decoration; C, furniture and industrial design; D, house design and architectural composition. Prerequisite, Art 1 or equivalent. Any quarter. Time and credit arranged. *Fletcher*

Art 112. Ceramics. A, pottery; B, china painting (given if three or more register). Any quarter, M. T. W. 2-5. Credit arranged. *Fletcher, Reynolds*

Art 113. Art Metalry. A, copper, aluminum, and silver smithing; B, jewelry, including stone polishing. Credit arranged. Fall, Winter, Spring, M. T. W. F. 2-5. *Reynolds, Larsen*

Art 114. Minor Crafts. A, leatherwork; B, basketry; C, polychrome and gesso; D, textile decoration, including block printing, stenciling, batik, etc. Credit arranged. Fall, M. T. W. F. 2-5. Winter, M. T. W. F. 2-5. Spring, M. T. W. F. 2-5. Fall and Spring, *Reynolds,* Winter, *Larsen*

Art 115. Graphic Art. A, etching; B, wood block printing or wood engraving; C, monotype or lithographic drawing; D, silk screen. Fall, Winter, or Spring, M. T. W. 2-5. Credit arranged. *Fletcher*

Education

E. A. JACOBSEN, C. E. MCCLELLAN, L. R. HUMPHERYS, ARDEN FRANDSEN, *Professors;* JOHN CRANDALL CARLISLE, *Associate Professor;* EDITH BOWEN, H. B. HUNSAKER, FLORENCE THOMPSON, *Assistant Professors;* GEORGE S. BATES, ALVIN HESS, *Instructors.*

DIVISION OF ELEMENTARY EDUCATION

JOHN C. CARLISLE, *Chairman.*

General requirements for graduation with the Bachelor of Science degree are listed on page 57. For a major in elementary education the student must complete at least 36 quarter hours of professional work in the fields of education and psychology and in addition a minimum of 30 hours in one field of study or 18 hours in each of two fields in addition to lower division group requirements. A field of study is interpreted in the broad sense, such as Social Science, Natural Science, Fine Arts, and so forth. Psychology, Child Development, or Library Science may be used for these special fields of study. The student is urged to get in touch with the department during his first quarter at the college for help in planning his program in detail.

The student's program must include the state requirements for elementary certification. These requirements are made up of courses in three general groups:

1. Courses designed to develop a broad, liberal background. Included in this group the student must complete 10 hours in English, at least 6 of which shall be in English Composition, 10 hours in Social Science, 10 hours in Physical Science, and 10 hours in Biological Science.

2. A second required group of more technical preparatory courses includes 4 hours in language and literature for children (English 24), 3 hours in art for elementary grades (Art 51 or 52, preferably both), 3 hours in music for elementary grades (Music 30), 3 hours in health education (Physiology 108), at least 3 hours in physical education, including materials and methods in

physical education for elementary schools (Physical Education 82), 3 hours in speech hygiene (Speech 107), and 2 hours in safety education (Education 145). Either the course in music or art may be waived if the student has an excess of credit in any one other of the above special curriculum areas.

3. The third required group includes the following professional courses in education: Principles of Elementary Education (Education 103), 5 hours; Child Psychology (Psychology 110), 3 hours; Psychology of the Elementary School Curriculum (Psychology 112), 2 hours; (Educational Psychology, Psychology 102a and b, may be substituted, with the consent of the department, for the above two courses); Organization and Administration (Education 114), 3 hours; Curriculum, 3 hours; Methods, 3 hours; and Practice Teaching, 10 hours (Education 104, 105, and 106, all of which must be taken during the same quarter). Enrollment in these three courses will be permitted only after the student has completed the requirements listed in (1) and (2) above, as well as the courses in principles of elementary education and educational psychology. Equivalent courses may be substituted with specific consent of the major professor.

Additional courses to make up the total of 36 quarter hours in psychology and education may be elected from those listed below, with the approval of the department.

Students wishing to prepare for elementary school supervision or administration should consult the department for special guidance in planning their work.

Courses of Instruction

103. Principles of Elementary Education. The course deals with the aims, functions, work and attainable goals of the elementary school as an integral part of the American system of education; its relations with the community and the other schools of the American series. Part of the work of the course will be devoted to observation and analyses of practices and procedures in selected elementary schools within the vicinity of the College. Five credits. Fall or Spring, Daily 9. *Carlisle*

104. 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. Three credits. Any quarter, T. Th. 1 to 3. *Bowen*

105. 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 thesis. Significance to teachers of the fact of individual differences. Consideration of school room equipment, or organization and play activity. Three credits. Any quarter, M. W. F. 8. *Bowen*

106. Practice Teaching. This course is for juniors or seniors who have had Educational Psychology and Principles of Education. The apprentice plan is followed which requires an initial period of observation with minor responsibility but with gradual increase of work and responsibility as trainee's ability is demontrated. Registration for all quarters should be arranged for at the time of fall registration. Ten credits. Any quarter, time arranged. Students who have credit for other courses in practice teaching, or who have successful teaching experience, may register, by special permission of the instructor, for less than ten hours credit. *Bowen and Supervising Teachers*

107. The Teaching of Reading. Objectives, standards of attainment, and methods of reading instruction; diagnostic and remedial techniques at the elementary and secondary level; reading in the activity program. Three credits. Winter, M. W. F. 10. *Carlisle*

108. Social Studies in the Public School. A consideration of the social responsibilities and opportunities of children and youth in the present and post-

war world. The part that should be played by the school and the teacher in helping boys and girls to meet these problems will be studied. Three credits. Fall, M. W. F. 10. *Carlisle and Staff*

110. Diagnostic and Remedial Teaching. A consideration of the specific objectives of the elementary school and methods of analyzing the extent to which these objectives are reached. Diagnostic and remedial measures with respect to various areas of the curriculum will be studied. Two credits. Spring, T. Th. 9. *Jacobsen*

114. Organization and Administration of Education. (See Division of Administration.)

165. Rural Education. An overview of the major problems of rural life as they relate to education. The adaptation of general educational objectives to rural conditions, especially as they pertain to Utah. The organization of rural schools, the course of study, and methods in education suited particularly to the rural school problem on both elementary and secondary levels. Two credits. Winter, Th. 4:30-6:30. *Jacobsen*

201. Background of Modern Education. (See Division of Graduate Work.)

Educational Psychology. (See Psychology 102a.)

Application of Statistics to Education and Psychology. (See Psychology 102b.)

Child Psychology. (See Psychology 110.)

Psychology of the Elementary School Curriculum. (See Psychology 112.)

Clinical Psychology. (See Psychology 103.)

Psychology of Learning. (See Psychology 107.)

DIVISION OF SECONDARY EDUCATION

C. E. McClellan, *Chairman.*

Note to Prospective Teachers. It will be greatly to the advantage of students expecting to qualify as teachers to adopt the following suggestions:

Take the course in general or elementary psychology during the freshman year. By all means take Educational Psychology and Principles of Education during the junior year and where convenient, the courses in Guidance and Personnel, and Organization and Administration, also. This will prepare the students to begin Observation and Practice Teaching in the Spring quarter of their junior year—the very best time to begin. It is expected that trainees will spread their training period over two quarters—one quarter has been by experience to be unsatisfactory. Students are urged, further, to read carefully the following explanations and course descriptions and requirements, including prerequisites, hours, credits, etc.

Students preparing to teach in the secondary schools will usually find it advantageous to major in subject matter other than education and complete professional requirements in the departments of Education and Psychology.

Students may major in secondary education under one of the two following plans: (1) a teaching major of not less than 30 hours approved by the department in which the major is chosen, and a teaching minor of not less than 18 hours; (2) a composite major of 60 hours in three or more closely related fields with not fewer than 18 hours in any one department within the composite major.

In addition to the teaching major and minor the student must complete 36 hours in professional education, including the courses required for the teaching

certificate in the secondary schools, and Education 201 or its equivalent. The electives are to be chosen from other courses listed under secondary education.

The courses required for a teaching certificate in the secondary schools of Utah are: Educational Psychology, Guidance and Personnel, Organization and Administration of Secondary Schools in Utah, Interpretation and Articulation of School Programs, Observation and Teaching in Secondary Schools, including Principles and Methods of Teaching, and electives in secondary education sufficient to make the total 30 hours.

The desirable sequence for courses in Psychology and Education is the order in which they are numbered. To follow this sequence it is essential to begin early in the junior year.

Courses of Instruction

Educational Psychology and Application of Statistics to Education and Psychology. (See Psychology 102a and 102b.)

108. Social Studies in the Public Schools. (See Division of Elementary Education.)

Education 111. Principles of Secondary Education. The study of problems and principles involved in the learning process; relationships between learner, subject matter, and method; objectives, motivation, direction, discipline, evaluation and other fundamental considerations. Prerequisite, Educational Psychology. Three credits. Any quarter, M. W. F. 8. *McClellan*

113. Occupational and Vocational Guidance. (See Division of Vocational Education.)

114. Organization and Administration. (See Division of Administration and Supervision.)

115. Secondary School Curriculum. This course deals with the nature and function of the curriculum. Different viewpoints respecting the curriculum, and examples of new type curricula now attracting attention in various parts of our country, are examined and evaluated. Three credits. Spring, T. Th. 8, W. 4. *McClellan*

116. Articulation of the Educational Program. (See Division of Administration.)

127. Classroom Management and Technique. This course, to be taken along with Education 129a, will consider such factors in the teaching process as: Personality of the teacher, planning the instruction, study procedures, types of teaching, adapting classroom practices to individual differences, discipline, evaluation. Two credits. Any quarter, T. Th. 8. *Carlisle*

129a. Practice Teaching in Secondary School. A course in the application of the principles of education. High school and junior high school teaching will be observed, reports on observations made, teaching plans developed, and some apprentice teaching done. This course, or equivalent, is prerequisite to Education 129 and is required for certification. It is urged that students make arrangements for the course before the quarter in which they plan to enroll. Approximately six hours of observation per week are required. Four credits. Any quarter. Time arranged. *Carlisle*

129b. Practice Teaching in Secondary School. Required for Secondary School Certificate. Open only to seniors and graduate students. Prerequisite, Education 129a, Psychology 102, Education 111 and Education 113; also eighteen hours of credit in the field in which student expects to do practice teaching. Applications for this course to be made one quarter in advance. Four credits. Any quarter, time arranged for practice teaching and 4 to 5 Mondays. *McClellan*

201. Background of Modern Education. (See Division of Graduate Work.)

241. Social Education. (See Division of Graduate Work.)

DIVISION OF VOCATIONAL EDUCATION

L. R. HUMPHERYS, *Chairman.*

Candidates for teacher's certificate in the several fields of vocational education will need to complete the following courses:

Agriculture: Psychology 102, 102b; Education 112, 113, 114, 116, 125, 126.

Home Economics: Psychology 102, 102b; Education 112, 113, 114, 116, 120, 121, 122.

112. Principles of Vocational Education. A consideration of the social and economic basis for vocational education and its relation to general education, fundamental principles and practices in the field of vocational education. Three credits. Fall, time arranged. Winter, M. W. F. 10. *Humpherys*

113. Occupational and Vocational Guidance. An analysis of the requirements of occupations, a consideration of the available tests, measurements, and other devices for determining individual differences, and an organized program for guidance. Prerequisite, Psychology 102. Vocational students should register for Winter quarter. Three credits. Fall, Winter, M. W. F. 8. Spring, M. W. F. 10. *Humpherys and Carlisle*

114. Organization and Administration of Education. (See Division of Administration.)

116. Articulation of the Educational Program. (See Division of Administration.)

***120. Methods in Teaching Home Economics.** Study of the contribution of Home Economics to the educational program. Analysis of teaching situations based upon the observation of school activities; an appreciation of methods of teaching in education for home and family living. Prerequisites, Foods 20 and 21, Textiles 10, 11, 20 and Psychology 102. Two credits. Winter, Spring, T. Th. 8. *Thompson*

121. Problems in Teaching Home Economics. Study of recent investigations in field of Home Economics and their bearing upon Home Economics curriculum and teaching methods. (Especially for teachers who are to qualify for a Vocational Certificate. It is suggested that Education 112 and 113 be taken daily the first three weeks and daily the last three weeks of the term simultaneously with this course in the fall term and Education 112 and 114 under the same arrangement winter term.) Prerequisite, Education 120. Four credits. Fall, 10-12; 2-4. Winter, 10-12; 2-4. Spring, time arranged. *Thompson*

122. Practice Teaching in Home Economics. Observation and teaching of vocational homemaking under supervision in public schools having cooperative agreement. The Trainee will leave the campus the middle five or six weeks of the fall or winter term and teach a full day's homemaking program in one of the approved schools. In the spring term the Trainee will teach at least two hours daily in one of the approved local schools. Prerequisites, Education 120 and Education 121. Eight credits. Spring. Time arranged. *Thompson*

***124. Methods of Teaching Farm Mechanics.** Scope of mechanics in agriculture, lesson planning, course of study preparation, shop equipment and management, skill requirements, and supervised practice. Five credits. Time arranged. *Humpherys*

***125. Methods of Teaching Agriculture.** For teachers of vocational agriculture. Fundamental principles and practices of teaching, selection, and organization of subject matter and supervision of agricultural activities on the farm. Five credits. Fall, Daily 9. *Humpherys*

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*Approval of instructor is necessary before student is accepted.

126. Practice Teaching in Agriculture. Practice teaching in approved local vocational agricultural departments under supervision. Four to eight credits. Trainees will be expected to leave the campus to train in a selected high school of the state for full time. Fall, Winter, and Spring. Time arranged.
Humpherys

DIVISION OF ADMINISTRATION AND SUPERVISION

E. A. JACOBSEN, *Chairman.*

Required courses: Courses prescribed for an elementary or for a secondary teaching certificate, and in addition, 18 hours chosen from the following courses listed below: Majors in this field meet the academic requirements for Utah certificates in administration and supervision.

114. Organization and Administration of Education. This course deals with the fundamental principles of organization and administration of schools in our American public school system of education with special emphasis on the Utah conditions. Three credits. Fall and Winter, M. W. F. 10. *Jacobsen*

116. Articulation of the Educational Program. A survey of existing needs for closer articulation of the various educational units and agencies. Discussion of the factors conditioning nature and extent of articulation and of the unifying principles upon which a well articulated education program rests. Three credits. Fall and Spring, Daily 2. *Jacobsen*

181. School Finance. A study of the importance of finances in a school system and the principles and practices involved in the collecting and the distributing of school revenues, with special deference to the conditions in Utah. Two credits. Fall, T. Th. 11. *Jacobsen*

201. Background of Modern Education. (See Division of Graduate Work.)

205. Reading and Conference. (See Division of Graduate Work.)

211. Educational Measurements and Statistics. (See Division of Graduate Work.)

221. Advanced School Administration. (See Division of Graduate Work.)

230. Supervision of Instruction. (See Division of Graduate Work.)

DIVISION OF LIBRARY SCIENCE

DAVID W. DAVIES, *Chairman.*

Requirements for the major in library science: 30 hours of work chosen from the courses in library science and the courses in other departments listed below, and including library science 100, 101, 120, and 121. In addition students majoring in library science must complete a minor of 30 hours in one subject field, or two minors of 18 hours.

Minors in library science complete 18 hours of library science courses including library science 100, 101, 120, and 121.

100. First Quarter Reference Materials and Bibliography. Basic reference materials, including trade and subject bibliography and their use in the informational service of libraries. Three credits. Fall, M. W. F. 8. *Rich*

101. Second Quarter Reference Materials and Bibliography. A continuation of work undertaken in Library Science 100 which is a prerequisite to this course. Three credits. Winter, M. W. F. 8. *Rich*

113. Book Repair and Binding. Methods of book repair, necessary bindery records, and the history of book binding. Two credits. Winter, T. Th. 9, laboratory to be arranged. *Davies*

120. First Quarter Cataloguing and Classification. Classification of books according to the Dewey decimal system and cataloguing instruction adapted primarily to the use of school and public libraries. Three credits. Winter, M. W. F. 11. *Henriques*

121. Second Quarter Cataloguing and Classification. A continuation of the work undertaken in Library Science 120 which is a prerequisite to this course. Three credits. Spring, M. W. F. 11. *Henriques*

150. School Library Administration. The arrangement of school libraries, and principles of budgeting and personnel relations. Three credits. Spring, M. W. F. 8. *Rich*

155. Book Selection. Methods and principles of book selection and book ordering. Three credits. Fall, M. W. F. 2. *Davies*

160. The Art of the Book. The history of bookmaking and printing. One credit. Spring, T. 1. *Davies*

Teaching of Reading. (See Division of Elementary Education 107.) Three credits.

Children's Literature. English 24. Four credits.

Speech 18. Five credits.

DIVISION OF SPECIAL PROBLEMS AND METHODS

JOHN C. CARLISLE, *Chairman.*

CALVIN FLETCHER, C. L. ANDERSON, *Professors;* IRA N. HAYWARD, L. MARK NEUBERGER, *Assistant Professors;* CLARA P. WEST, *Instructor.*

Of the 30 hours required for the secondary school teaching certificate, three hours may be chosen by the student from the following courses. The course chosen must be in either the major or minor field of the candidate.

107. The Teaching of Reading. (See Division of Elementary Education.)

108. Social Studies in the Public School. (See Division of Elementary Education.)

109. The Teaching of Science. Materials and methods of teaching science in the elementary schools will be considered. The curriculum and desirable procedures in the teaching of science in the secondary school, however, will be given special attention. Three credits. Spring, T. Th. 9, W. 1. *Carlisle and Staff*

123. The Teaching of English. A course for those who are teaching or planning to teach the language arts. The purpose of the course is to study the aims, materials and methods in the three fundamental areas of English instruction: speaking, reading, and writing. Three credits. Winter, T. Th. 4:30 to 6. *Hayward*

Three credit hours earned in methods courses in Physical Education and in Music may be counted toward certification by majors in these fields.

***145. Safety Education.** This course will emphasize (a) the needs for safety education in the modern world; (b) the role of the school in a program of safety; (c) methods and materials for teaching discussions, and readings, stressing various aspects of safety and directed by safety specialists from many areas. Two credits. Winter and Spring, T. Th. 11. *Anderson*

151. Art Education for High School. Methods of teaching art on the secondary school level. How to motivate the work in drawing, painting, design, crafts, etc. Arrangement of the shop, studio, selection of tools, supplies, etc. are all taken up. Required of all majors and minors in art on this level. Five credits. Fall, M. W. F. 9; Lab., T. Th. 9-12. *Fletcher*

*This course is in addition to the 30 hours in Psychology and Education.

179. Methods of Teaching Typewriting. A study of recent developments and practices in the teaching of typewriting. The following items will be given particular attention: method of approach with emphasis on the speed approach, evaluation of the Dvorak keyboard, automotization vs. rhythm, prognosis, diagnosis of errors, remedial instruction, typewriting for personal use, when and how to teach erasing, battery tests, selection of textbooks. A course for those preparing to teach typewriting and for those engaged in teaching, who wish to render their teaching more effective. Three credits. (Not given 1942-43.) *Neuberger*

180. The Teaching of Stenography. A study of the newer methods and trends in the teaching of stenography and observation and practice in the teaching of shorthand classes. It includes a study of the laws of learning, objectives in teaching shorthand, organization of materials, and standards of achievement. A course for those preparing to teach stenography and for those engaged in teaching who wish to render their teaching more effective. Three credits. Fall, M. W. F. 8. *West*

DIVISION OF GRADUATE WORK

E. A. JACOBSEN, *Chairman.*

The Division of Graduate Work in the School of Education aims to serve the following purposes:

(a) to provide fundamental courses on a graduate level leading to advanced study and specialization in Education;

(b) to provide training for the several branches of school administration and supervision;

(c) to provide training in connection with the department of psychology, for specialists in clinical and guidance work in the schools;

(d) to provide, in connection with other departments, teachers, with a year of graduate work.

In addition to the graduate courses listed, the student may elect upper division courses from the undergraduate divisions, and graduate courses related to the field of specialization from other departments. The selection of courses should be made in terms of the purpose chosen and in consultation with the major professor.

A graduate minor, other than Psychology or Education, may be used in connection with a graduate major in Education.

Courses of Instruction

Education 201. Background of Modern Education. An integration of the history and philosophy of education as a basis for the understanding of modern education. The evolution of educational thought, the sources of great philosophies of education in relation to their times. Five credits. Fall, Daily 10. *McClellan*

Education 203. Evaluating the Elementary School. Studies evaluating the changing elementary school will be analyzed. Particular attention will be given to organization and curriculum. Newer methods utilized in evaluation will be considered. Enrollment open only to experienced teachers or prospective teachers who have completed their courses in practice teaching. Three credits. Winter, M. W. 4:30 to 6. *Carlisle*

Education 205. Reading and Conference. A course providing for individually directed study in the fields of one's special interest and preparation. One or two credits per quarter. Any quarter. Time arranged. *Staff*

Education 211. Educational Measurement and Statistics. A study of the fundamental principles of measurement tests and test construction, statistical analysis, and evaluation procedures in education. Five credits. Winter, Daily 9. *Humpherys*

Education 221. Advanced School Administration. A general study of the work of the school administrator and the principles upon which the profession of school administration is founded and efficiently practiced. Consideration will be given to major educational problems with which the school administrator is confronted. Five credits. (Not given 1942-43.)

Education 230. Supervision of Instruction. Principles and practices of supervision, including the nature and use of the various supervisory techniques to improve instruction. Two credits. Spring, T. Th. 11. *Jacobsen*

Education 237-8-9. Educational Seminar. This course gives opportunity for the investigation and report of individual problems and for group discussion and criticism on these reports. Minimum of one quarter required of all Education majors. Any quarter. Time and credit arranged. *Staff*

Education 241. Social Education. The implications for education involved in social conditions and social change. The social significance of current educational theories and practices. Three credits. Winter, T. Th. 8, W. 3:30-4:30. *Jacobsen*

Education 267. Introduction to Research. An inquiry into the nature and sources of research problems with a study of the underlying principles and the method 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. Two credits each quarter. Fall and Winter, time arranged. *McClellan*

Education 271. Research and Thesis Writing. This course provides for individual work in thesis writing with the necessary guidance and criticism. Any quarter. Time and credit arranged. *Staff*

Reading on Current and Special Topics in Psychology. (See Psychology 205a, b, c.)

Research on Special Problems in Psychology. (See Psychology 206.)

Music

WALTER WELTI, N. WOODRUFF CHRISTIANSEN, *Associate Professors;*
LUDEAN ROGERS, CHAS. J. STEEN, *Instructors.*

Vocal Music Major. Required courses: Music 1, 4, 5, 11, 12, 13, 21, 22, 23, 30, 106, 114, 117, 124, 125, 126, 134. Also sufficient skill to present a creditable solo recital prescribed by the major professor; ability to play second grade piano music at sight; a general course in oral expression, creative dancing; and one year of a foreign language, or a course in foreign language pronunciation. Consult major professor early and often.

Music majors specializing in piano or organ may enroll under either instrumental or vocal requirements.

Instrumental Music Majors: To complete a major in instrumental music with recommendation to teach band and orchestra, the following courses are required: Music 11, 12, 13, 111-112-113-114, 80-81-21-22-23, (21-22-23 must be taken before practice teaching) three or more quarters of symphony orchestra, six or more quarters of band as prescribed by the major professors, three quarters or equivalent of piano, sufficient private instruction or equivalent on a band or orchestral instrument for a creditable solo performance, one quarter each private instruction, or equivalent, on a string instrument, a brass instrument, and a reed instrument.

For music major without recommendation to teach band and orchestra, consult the major professor.

In 1936 the College was awarded a complete Carnegie music set containing 2,000 recordings, 150 bound scores, and 100 selected books of music. This material is available to students and is used in the music courses.

1. **Music for Everyone.** A general non-technical appreciation course in the types, and forms of music, with some reference to biography, nationality and historical development. Three credits. Fall, M. W. F. 9. *Welti*

4, 5. **Eye and Ear Training.** The fundamentals of music theory; the meanings and application of notes, key signatures, rhythmic and melodic outlines; simple melody writing. A **continuous course.** Prerequisite to Music 30. Two credits each quarter. Fall and Winter, T. Th. 9. *Welti*

11, 12, 13. **Harmony.** Prerequisite, familiarity with the piano keyboard. Chord structure and progressions, to and including modulations. Three credits each quarter. Fall, Winter, and Spring. M. W. F., Section 1, 9; Section 2, 10. *Christiansen and Rogers*

15, 16, 17. **String Ensembles.** Offering an opportunity for good players to organize into trios, quartets, and other small units. One credit each quarter. Fall, Winter, and Spring. Time 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. One and a half credits each quarter. (See 118, 119, 120.) Fall, Winter, and Spring. M. W. 12-2. *Christiansen*

21, 22, 23. **Band and Orchestra Methods.** A study of the various band and orchestra instruments, and 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. This course must precede practice teaching in instrumental music. Fall—brass instruments; Winter—reed instruments; Spring—string instruments. Three credits each quarter. Fall, Winter, and Spring, Daily 2. *Christiansen and Steen*

24, 25, 26. **Men's Chorus.** A normal singing voice is required. Consult director at once to make sure of your qualifications and the part you sing. One credit each quarter. Fall, Winter, and Spring. M. W. F. 12. *Welti*

27, 28, 29. **Ladies' Chorus.** Same conditions as for men's chorus, applied to women's voices. One credit each quarter. Fall, Winter, and Spring. T. Th. F. 12. *Welti*

30. **School Music Methods.** Methods of teaching music in the grades. Prerequisite, Music 4 and 5. No exceptions made to this rule. Three credits. Fall, M. W. F. 10. Spring, T. Th. 3, 4:30. *Welti*

35, 36, 37. **Vocal Groups.** Offering an opportunity for good voices to organize into trios, quartets, and other small units. One credit each quarter. Fall, Winter, and Spring. Time arranged. See instructor before registering. *Welti*

38. **Music for Young Children.** A study of material for listening lessons, songs, music games, and simple body rhythms for children of Nursery School age. One credit. Fall, T. 10. *Welti*

41, 42, 43. **Band.** This organization is the College Concert Band. It includes the R. O. T. C. Band and all other students who qualify. Concerts will be given and music furnished for athletic events. State tour end of Winter quarter. Members are required to play at all public appearances of the band. One credit each quarter. (See 141, 142, 143.) Fall, Winter, and Spring, T. Th. 12-2. *Christiansen*

R. O. T. C. Band. Band men who are required to take Military Science should register for Military Science and then ask to be assigned to the R. O. T. C. Band.

44, 45, 46. Brass and Reed Groups. Brass quartets, sextets, and saxophone quartets. Members will be selected from applicants. One-half credit each quarter. Fall, Winter, and Spring. Time arranged.

47, 48, 49. Composition and Analysis. Practical composition in the small forms from the extended period to the song form with trio. Prerequisite, at least one year of harmony. Two credits each quarter. Fall, Winter, and Spring, T. Th. 9. *Rogers*

80. Opera Appreciation. An intensive study will be made of the world's best operas. Particular attention will be given to the development of the orchestra as an essential part of the opera. By means of recordings the choicest musical selections will be learned. Two credits. Fall or Spring, T. Th. 3. *Christiansen*

81. Symphony Appreciation. Complete symphonies will be given by the phonograph method. A careful study will be made of their form and content. Two credits. Winter, T. Th. 3.. *Christiansen*

89. Bach, Beethoven and Brahms. Their lives and works, their influence upon the development of music, and the influence upon their music of the times in which they lived. Two credits. Spring, T. Th. 10. Children's Library. *Rogers*

106. Music History. The appreciation of music from its historical and biographical bases, the development of small and large forms from folk music through the opera and the symphony. Not open to freshmen. Three credits. Spring, M. W. F. 9. *Welti*

108. Keyboard Harmony and Group Piano. Drills, employing triads, seventh chords and their inversions. Harmonization of melodies, improvisation, and modulation, transposition. Prerequisite, Music 11, 12, 13. Two credits. Any quarter. Section 1, elementary, T. Th. 9; Section 2, advanced, T. Th. 10. *Rogers*

111, 112, 113. Advanced Harmony. Prerequisite, Music 11, 12, 13. Modulation, embellishing chords, inharmonic embellishments and figurations, analysis. Three credits each quarter. Fall, Winter, and Spring, M. W. F. 9. *Christiansen*

114. Conducting. The art and technic of effectively conducting choral and instrumental groups. Two credits. Spring, T. Th. 9. *Welti*

117a. Opera Production. A thorough study of the details involved in the production of opera. Students admitted to this course will be assigned definite responsibilities in the preparation and presentation of the College opera. Consult instructor before registering, the earlier the better. All work by special assignment. No regular class meetings. Two credits. Winter, time arranged. *Welti*

117b. Opera Production. Three credits will be given for major roles and assignments. *Welti*

118, 119, 120. Symphony Orchestra. Senior College credit will be given students of advanced standing. Prerequisite, two years in Orchestra. One and one-half credits. Time as for Music 18, 19, 20. *Christiansen*

124, 125, 126. Advanced Chorus. For juniors and seniors who have had choral experience. One credit each quarter. Fall, Winter, and Spring. Men, M. W. F. 12. Ladies, T. Th. F. 12. *Welti*

134. Counterpoint. Prerequisite, Harmony 13. Strict contrapuntal composition in all five species, in two, three, and four parts. Three credits. Fall, M. W. F. 11. *Rogers*

135. Counterpoint. Strict and free counterpoint; a study of inventions and their composition. Three credits. Winter, M. W. F. 11. *Rogers*

141, 142, 143. Band A. Rehearsals to be held jointly with 41, 42, 43. Senior College credit will be given students of advanced standing. Prerequisites, two years of band. One and a half credits each quarter. Fall, Winter and Spring, T. Th. 12-2. *Christiansen*

PRIVATE INSTRUCTION COURSES

The following courses are given through private study only. Appointments and fees must be arranged with the instructor whom you select.

Note: Students taking one lesson a week in any private music study, and getting the required amount of practice and preparation, shall register for one and one-half credits per quarter. Students taking two lessons and getting the required amount of practice and preparation shall register for three credits per quarter.

Note: Public Recital. A series of recitals will be given at the College during the year. Students registered in the Private Instruction courses are eligible to participate upon recommendation of their teachers. No additional credit is offered for this work.

Note: Written departmental approval must be secured on registration cards if the student plans to take private instruction from anyone other than a member of the regular resident staff. The Department reserves the right to reject credit not approved in advance.

50, 51, 52. Piano. For students having less than two full years of piano instruction. *Rogers and Associates*

53, 54, 55. Vocal. Conditions same as for piano. *Welti and Associates*

56, 57, 58. Wind Instruments. All the wind instruments of the band and orchestra. For students having less than two full years of previous training. *Christiansen and Associates*

60, 61, 62. Violin. For students having less than two full years of previous training. *Christiansen and Associates*

66, 67, 68. Pipe Organ. Conditions same as for piano. *Clark and Associates*

150, 151, 152. Piano. For students recommended by an approved teacher, and satisfying the departmental standards for the equivalent of two full years of previous study. *Rogers and Associates*

153, 154, 155. Vocal. For advanced vocal students. *Welti and Associates*

156, 157, 158. Wind Instruments. For students satisfying the departmental standards for the equivalent of two full years of previous study. *Christiansen and Associates*

160, 161, 162. Violin. For students recommended by and approved teacher and satisfying the departmental standards for the equivalent of two full years of previous study. *Christiansen and Associates*

166, 167, 168. Pipe Organ. For advanced pipe organ students. *Clark and Associates*

Physical Education

JOSEPH R. JENSON, W. B. PRESTON, *Professors;* E. L. ROMNEY, *Director of Athletics;* H. B. HUNSAKER, ..., *Assistant Professors;* EDNA SWENSON, *Instructor;* KENNETH VANDERHOFF,* JOSEPH WHITESIDES,* DELBERT YOUNG, ROBERT BURNETT, MARVIN BELL, *Assistant Athletic Directors;* GEORGE NELSON, *Trainer.*

Courses required for women who desire a major in Physical Education: Physical Education 40, 41, 42, 43, 48, 49, 50, 68, 69, 70, 72, 80, 81, 82, 83, 84, 91, 92, 93, 94, 106, 141, 142, 143, 154, or 74, 168, 169, 180a, 180b, 183, 184, 185, 191, 192; Physiology 4, 50, 108, 110, 111, 114, 125; Art 32; Music 1; Chemistry or Physics, 5 credits; Bacteriology 1.

Service Courses

In the service courses of this Department, an opportunity is given each student to perfect skills in some form of physical activity which will help establish a permanent interest in healthful recreation of the active as well as passive type.

A physical examination is given to all students at the beginning of each year in order to advise them properly as to the type of activity best suited to their individual needs.

Women students are required to take some physical education service course for six quarters. This work may be selected by each student. Men students not taking military training are also required to take six quarters in physical education service courses.

It is recommended that all male students in order to aid national defense take some activity course in Physical Education. A wide range of courses in aquatics, dual, team, individual and outing activities are offered each quarter. Credit in Physical Education will count towards a college degree.

Recreation

The Physical Education department aims to meet the recreational needs and interests of every student whether he is being trained in agriculture, engineering, business, or other professional fields.

This department will try to prepare the future farmer, banker, teacher or doctor for wise use of his leisure time. After courses in this department, students should be so interested in recreation that they will be valuable aid to any community.

Awards will be given to managers of various recreational groups and individual awards for special achievement. There will be groups organized in hiking, water sports, winter sports, tap dancing, fencing, archery, horse shoes, tennis, golf, badminton, boxing, swimming, tumbling and social dancing.

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. This service is also looked upon as an educational department to teach preventive medicine and hygiene. Through consultations, examinations, and advice it attempts to point out the causes of ill health, and to present clearly the fundamental laws of good health.

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*On leave.

Professional Courses in Physical Education

Because of the great demand for trained leaders in community recreation and playground management, directors of physical education in high schools, and for high school coaches, this department offers an opportunity to obtain a major or minor in physical education and also to meet the state requirements for certification of teachers of physical education, and coaches in high schools.

Intramural Sports

Intramural sports are conducted as a part of the program of the Department of Physical Education. The department for women, in cooperation with the Women's Athletic Association, has charge of all women's athletics and offers a wide program of intramural sports.

The Department of Physical Education for Men carries on an extensive organized Intramural sports program. Competition in 12-16 sports is carried on in four separate leagues, fraternity, department, club, and all-campus. All male students are eligible and encouraged to participate in one of these leagues. Students who have qualified through the Physical Education Department for "preferred rating," may receive Physical Education credit for Intramural sports.

The function of the intramural program is to give every student moral, social, physical, and educational values derived from competitive athletics. The program of athletics provides for both individual and team endeavor, "athletics for all," which is the purpose of the establishment of intramural sports.

SERVICE COURSES FOR MEN

2. Football. One credit. Fall. Daily 4. *Young, Romney*

4, 5. Boxing. One credit each quarter. Fall and Winter. T. Th. 11 and T. Th. 2. *Jenson*

7, 8. Wrestling. One credit each quarter. Fall and Winter. M. W. F. 1 or 2. *Nelson*

12. Track. One credit. Spring, Daily 3-5. *Young*

13, 14, 15. Handball. One credit each quarter. Fall, Winter, Spring. Time arranged. See Department Head before registering. *Jenson*

16, 17, 18. Swimming. One credit each quarter. Fall, Winter, Spring, M. W. F. 9, 10 or 3. *Jenson*

23, 24, 25. Basketball. One credit each quarter. Fall, M. W. F. 2 or 3; Winter, M. W. F. 3, or T. Th. 8 or T. Th. 1; Spring, T. Th. 3. *Jenson*

26, 27, 28. Restricted Gymnastics. One credit each quarter. Students may register only after consultation with head of department. Fall, Winter, Spring, M. W. F. 12. *Hunsaker*

29. Sigma Delta Psi. One credit. Winter, M. W. F. 3. Spring, M. W. F. 2. *Hunsaker*

34. Tumbling. One credit. Winter, T. Th. 8. *Hunsaker*

36. Badminton. One credit. Fall, T. Th. 9 or M. W. F. 11. Winter, T. Th. 9, or T. Th. 2. Spring, M. W. F. 2, or T. Th. 8. *Hunsaker*

37, 38, 39. Heavy Apparatus. One credit each quarter. Fall, Winter, and Spring, M. W. F. 11. *Bell*

133, 134, 135. Tumbling. Prerequisite, P. E. 34. One credit each quarter. Fall, M. W. 3. Winter, M. W. 3. Spring, T. Th. 3. *Hunsaker*

SERVICE COURSES FOR WOMEN

40. Speed Ball and Volley Ball. One credit. Fall, M. W. 8, or T. Th. 8. *Staff*

41. Basketball. One credit. Winter, Sec. 1, M. W. 9; Sec. 2, T. Th. 9. *Staff*

42. Softball. One credit. Spring, M. W. 12, T. Th. 12. *Staff*

44. Tumbling and Stunts. One credit. Spring, M. W. F. 8. *Swenson*

45, 46, 47. Restricted Activities. This course is given for those students physically unable to take the required work in physical education. Students may register only after consultation with the head of the department. One credit each quarter. Fall, M. W. F. 12; Winter, M. W. F. 11; Spring, M. W. F. 8. *Swenson*

48, 49, 50. Elementary Creative Dancing. A study of fundamental movement techniques, elements of rhythmic, and musical patterns, materials of design and composition, original composition of dance forms, history of the dance. One credit each quarter. Fall, M. W. F. 9; Winter and Spring, M. W. F. 1. *Swenson*

51, 52, 53. Elementary Swimming. One credit each quarter. Fall and Winter, M. W. F. 11, 12. Spring, M. W. F. 12. *Swenson and Staff*

56. Intermediate Swimming. One credit. Spring, M. W. F. 2. *Staff*

57. Badminton. One credit. Fall, M. W. F. 9. Winter, T. Th. 8. *Staff*

58. Rifle. One credit. Fall or Winter, M. W. F. 9. *Nielson*

154. Advanced Swimming. One credit. Winter, M. W. F. 1. *Staff*

SERVICE COURSES FOR MEN AND WOMEN

1. Hiking. One credit. Fall and Spring, T. 3-5. *Staff*

3. Winter Sports. One credit. Winter, T. Th. 1. *Hunsaker*

9, 10, 11. Fencing. One credit each quarter. Fall, Winter and Spring, M. W. F. 11, or T. Th. 11. *Swenson*

61. Archery. One credit each quarter. Sec. 1, Fall, M. W. F. 9 and 2; Winter, T. Th. 8. Spring, M. W. F. 9 and T. Th. 2. *Hunsaker*

63, 64, 65. Recreative Games. One credit each quarter. Fall, T. Th. 10; Winter, T. Th. 2, or T. Th. 10; Spring, T. Th. 9-10. *Staff*

66. Badminton. One credit. Fall, T. Th. 8; Winter, M. W. F. 2; Spring, T. Th. 9. *Hunsaker and Staff*

67. Tennis. One credit. Spring, M. W. F. 8, 9, 10, 11, or 1. *Staff*

68, 69. Elementary Folk Dancing. One credit each quarter. Fall, T. Th. 9. Winter, M. W. F. 8. *Swenson*

70, 71, 70. Elementary Tap Dancing. M. W. F. 3. One credit each quarter. Course 70, Fall and Spring. Course 71, Winter. *Staff*

72. Social Dancing. One credit. Any quarter. Fall, Winter, or Spring, T. Th. 10. *Swenson*

73. Golf. One credit. Spring, M. W. F. 11 or 2. *Burnett*

74. Red Cross Life Saving. One credit. Spring, M. W. F. 9. *Jenson*

109. Fencing. Prerequisite, Fencing 9, 10 and 11. One credit. Fall, T. Th. 12, M. W. F. 11, T. Th. 11 and T. Th. 12. *Swenson*

155. Diving. One credit. Spring, M. W. F. 11. *Staff*

166. Badminton. One credit. Prerequisite, P.E. 66 or 36. Fall, T. Th. 3; Winter, T. Th. 3; Spring, M. W. 3. *Hunsaker*

167. Advanced Tennis. M. W. F. 8. *Staff*

168, 169. Advanced Folk Dancing. One credit each quarter. Fall, T. Th. 2; Spring, T. Th. 1. *Swenson*

170, 171. Advanced Tap Dancing. One credit each quarter. Winter, T. Th. 12; Spring, T. Th. 2. *Swenson*

172. Leadership in Social Dancing. One credit. Spring, T. Th. 8. *Swenson*

PROFESSIONAL COURSES

20, 21, 22. Fundamentals of Sports. A freshman laboratory course for Men Physical Education Majors. These courses are prerequisites for Physical Education 120-121-122. One credit each quarter. Fall, Winter and Spring. T. Th. 11. *Hunsaker*

30, 31, 32. Fundamentals of Sports. A sophomore laboratory course for Men Physical Education majors. These courses are prerequisites for Physical Education 130, 131, 132, and are a continuation of the Freshman class. One credit each quarter. Fall, Winter and Spring, T. Th. 11. (Not given 1942-43.) *Hunsaker*

75. Introduction to Physical Education. A survey of the whole field of physical education, showing its relationship to art and enriched living. Two *Staff*

77. Sport Skill for Women. This class is organized for freshman and sophomore physical education majors. It is designed for the survey and review of all the skills necessary for teaching Physical Education. One credit. Fall, T. Th. 3. *Swenson*

80. Nature and Function of Play. An analysis of the basic principles underlying play; the function of play in the growth, development, and social adjustment of the child and the adult. Two credits. Fall, T. Th. 10. *Jenson*

81. Rhythms and Dramatic Games. For women. A study of music for young children and its use in creative movement. Methods of presenting and developing rhythms will be studied. Two credits. Fall, M. W. F. 12. *Swenson*

83. Playground and 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 hours will take up games and folk dances. Four credits. Spring, Daily 10. *Jenson*

84. Normal Growth and Development. A study of the laws of normal growth and development of the child differences. Special emphasis on the age characteristics with sex and individual differences. Three credits. Spring M. W. F. 2. (Not given 1942-43.) *Jenson*

85. Methods in Intramural Organization for Men. Designed to study the organization of intramural athletics. Three credits. Fall, M. W. F. 11. *Hunsaker*

92. Organization of Intramural Programs for Women. This course is designed to study the organization of sports days, play days, tournaments and the administration of intramural activities for women. Two credits. Winter, T. Th. 11. *Staff*

106. Physiology of Activities. Prerequisite, Physiology 4. Four credits. Fall, M. T. W. F. 8. *Carter*

120. Techniques of Dual Sports. This class designed for students majoring in Physical Education. Students will be taught Tennis, Fencing, and Handball, and will be expected to prepare a syllabus of the class work. Two credits. Fall, M. W. F. 10. *Hunsaker*

121. Techniques of Combative Sports. This class is designed for students majoring in Physical Education. Students will be taught Wrestling and Boxing; will be expected to prepare a syllabus of class work. Two credits. Winter, M. W. F. 10. *Hunsaker*

122. Techniques of Team Sports. This class designed for students majoring in Physical Education. Students will be taught Volleyball, Baseball, and Touch Football or Speedball. Students will be expected to prepare a syllabus of class work. Two credits. Spring, M. W. F. 10. *Hunsaker*

130. Techniques of Dual Sports. This class designed for students majoring in Physical Education. Students will be taught Badminton, Archery, and Golf. Students will be expected to prepare a syllabus of class work. Two credits. Fall, M. W. F. 10. (Not given 1942-43.) *Hunsaker*

131. Techniques of Gymnastics. Prerequisites to this class are: Tumbling 33, Apparatus 37 or 38, Social Dancing 72. This class is designed for students majoring in Physical Education. Students will be taught Apparatus, Tumbling and Social Dancing. Students will be expected to prepare a syllabus of class work. Two credits. Winter, M. W. F. 10. (Not given 1942-43.) *Hunsaker*

132. Techniques of Aquatics. Prerequisite to this class is Swimming 15. This class designed for students majoring in Physical Education. Students will be taught diving, swimming, life saving. Students will be expected to prepare a syllabus of class work. Two credits. Spring, M. W. F. 10. (Not given 1942-43.) *Hunsaker*

141, 142, 143. Advanced Creative Dancing. A further development of skills in the use of tools of movement, rhythm and music improvisation and dance composition; principles and methods of teaching the modern dance; present trends in the dance in education. Two credits each quarter. Fall, Winter, and Spring, M. W. F. 2. *Swenson*

150, 151, 152. Methods in Dancing. A course designed for students who are planning to teach Dancing, Tap, Folk and Creative Dancing. A syllabus will be required of each student. Two credits. Fall, Winter and Spring, T. Th. 1. *Swenson*

160, 161, 162. Techniques of Sports for Women. This class is designed for students majoring in Physical Education. Students will be taught the techniques of teaching tennis, badminton, fencing, basketball, volley ball, baseball, swimming, and archery. Each student will be expected to prepare a syllabus of class work. Fall, Winter, and Spring, M. W. F. 10. Two credits. *Staff*

180a. Corrective Physical Education. A study of those facts in body mechanics which contribute to the basic principle of posture. Analysis of postural deviations, their prevention and correction. Prerequisite, Physiology 4. Three credits. Winter, M. W. F. 9. *Swenson*

180b. Practice in Corrective Gymnastics. Practical application of 180a. Consult head of department before registering. Spring, T. Th. 9. *Swenson*

181. Corrective Physical Education. An analysis of the techniques or mechanics of the movements in the classified groups of physical education activities; an analysis of the teaching explanations of how to make movements or coordinations; an analysis of skills; a study of the nomenclatures used in the formulation of a working nomenclature for all the activities. Three credits. Spring, M. W. F. 11. *Hunsaker*

182. Materials and Methods in Physical Education for Elementary Schools. For men and women. A study of the activity interests of children and appropriate materials for different age levels, selection of materials, methods of presentation. Four credits. Winter, Daily 10. *Swenson*

183. Interpretation of Physical Education Objectives. An analysis of the results and values of physical education activities under leadership in terms of development, adjustment and standards and their relationships as objectives. Five credits. Fall, Daily 9. *Jenson*

184. Administration of Physical Education. A study of the administrative procedures in the conduct of physical education in the high school; curriculum construction and program planning. Three credits. Spring, M. W. F. 9. *Swenson*

185. History of Physical Education. Two credits. Winter, T. Th. 9. *Jenson*

186. Heavy Apparatus. A study of methods of teaching gymnastics such as the horizontal bar, parallel bars, side horse, and rings. Prerequisite, at least one quarter of Elementary Heavy Apparatus. Two credits. Fall and Winter, M. W. F. 11. *Bell*

187. Advanced Swimming. For men. A continuation of course 16. The student will be required to pass certain standard tests. Two credits. Winter, Daily 3. *Jenson*

188. Methods in Football. Fundamentals of football, theory and practice, details of such position on the team, training, and managing, complete technique of developing offensive and defensive tactics. A comparison of the various systems in American Intercollegiate football. Two credits. Fall, M. T. W. 12. *Romney*

189. Methods in Basketball. Coaching and training of basketball teams, beginning with fundamentals; passing, dribbling, and pivoting, with emphasis on the psychology of the game; various methods of defense and offense. Two credits. Winter, M. T. W. 12. *Burnett*

190. Methods in Track and Field. How to train for various track and field events; their form and technique; conduct of the athletic meets; construction, use, assembling of all equipment used by the participants on the field; development of certain types of individuals for certain events. Two credits. Spring, M. T. W. 12. *Young*

191. Interpretation of the Health Examination. A study of examination procedures, the detection of physical defects, the general assessment of the health of the individual, and the follow-up program. Three credits. Spring, M. W. F. 11. *Preston*

192. Tests in Physical Education. Practical studies of tests now in use, and the technique of test construction. Three credits. M. W. F. 11. *Hunsaker*

195. Problems in Physical Education. Three credits. Spring, M. W. F. 2. *Jensen*

199. Physical Education Seminar. Three credits. Winter, M. W. F. 1. *Jenson*

Psychology

ARDEN FRANDSEN, E. A. JACOBSEN, *Professors;*
JOHN M. HADLEY, *Assistant Professor.*

The Department of Psychology is primarily a service department which contributes to the training of students who major in other departments. However, a major in Psychology should prepare students for diagnostic and remedial teaching in elementary schools, counseling in high schools, private or institutional clinical practice, high school teaching (jointly with some other major), and for graduate study in psychology, education, child development, and social work.

Major: The requirements, beyond completing the "general group requirements" in the Lower Division, include 40 hours of approved courses from the following:

Psychology 3, 54, 75, 102 and 102b, 103a and 103b, 107, 110, 112, 120, 140, 200, 205a, b, c, 206; Mathematics 111; Physiology 5, 145; Sociology 170; Education 107, 110, and 211; and Speech 171.

Minor: Eighteen hours of approved courses from those listed above.

A. Freshman Orientation. Lectures on problems of adjustment to college life and on the vocational opportunities for which the College gives training. Required of all freshman students in the Division of Orientation, that is students who when they enter college are undecided upon a major study. One half credit. Fall, M. 1. *Frandsen*

3. Elementary General Psychology. A study of the general principles of human behavior including: nature of personality; factors determining development; how we learn, observe, and think; motives of human conduct, dealing with people; and the maintenance of personal efficiency and mental health. Intended for Lower Division students in all schools of the College. Five credits. Fall, Daily 8, 9. Winter, Daily 9, 2. Spring, Daily 8, 9. *Frandsen and Hadley*

13. Study Habits and Mental Health. A practical course intended to aid students in improving the efficiency of their work and study habits, to avoid "maladjustive" behavior, and to deal rationally with personal problems. Two credits. Fall, T. Th. 10. Winter, T. Th. 11. Spring, T. Th. 11. *Hadley*

54. Psychology of Business and Industry. The methods and explanatory principles of psychology will be applied to understanding several general problems of business and industry, including: vocational choice and the selection of employees; advertising and selling; marketing and consumer research; conditions for efficient work; and the psychological aspects of training for work in business and industry. (See also Bus. Adm. 54.) Prerequisite, General Psychology or instructor's approval. Three credits. Winter, M. W. F. 10. *Hadley*

75. Experimental Methods in Psychology and Education. A study of the scientific method and of specific experimental procedures applied in the study of fundamental problems in psychology and education. Three credits. (Not given 1942-43.) *Frandsen*

102a. Educational Psychology. A professional course for prospective high school teachers intended to increase understanding of personality and to develop greater insight into the conditions for effective learning. Applications to development in adolescence of both normal and deviate personalities, to provisions for individual differences, and to learning junior and senior high school subjects will be emphasized. Prerequisites, General Psychology, and for students who have not taken Elementary Statistics, Psychology 102b must either precede or be taken parallel with Psychology 102a. Four credits. Fall, M. T. W. F. 9. Winter, M. T. W. F. 9. Spring, M. T. W. F. 10. *Hadley*

102b. Applications of Statistics to Education and Psychology. An elementary study of the statistical procedures used in handling test scores in the schools and of the concepts needed to read current educational and psychological literature. One credit. Fall, Th. 9. Winter, Th. 9. Spring, Th. 10. *Hadley*

103a. Clinical Psychology. Applications of clinical psychology (1) to guidance in planning major life activities—educational, vocational, social, and recreational, (2) to diagnostic and remedial teaching, and (3) to the diagnosis and prevention or correction of conduct and personality maladjustments. Prerequisites: General Psychology and Elementary Statistics. Five credits. Winter, Daily 11. *Frandsen*

103b. Clinical Psychology. Students will practice under guidance to acquire skill in diagnosing intelligence by the individual Binet procedure and to learn

how to administer and use tests of aptitudes, interests, personality, and adjustment. Prerequisite, Clinical Psychology 103a. Two credits. Spring, T. Th. 3.
Frandsen

107. Psychology of Learning. A comprehensive study of descriptions of learning, factors related to efficiency, explanatory theories of learning, and of applications of the facts and explanatory principles to guiding learning in school and out-of-school situations. Prerequisites, General Psychology and Elementary Statistics. Three credits. Spring, M. W. F. 9. *Frandsen*

110. Child Psychology. A study of the roles of maturation, learning, and environmental conditions in the motor, mental, social, and emotional development of children from birth to adolescence. Generalizations with respect to individual differences, emotions, motivation, how children learn, observe, and think will be applied to understanding and guiding children's behavior in home, school, and community. Opportunity for observation and applications of psychological methods of child study in the school will be provided. Prerequisite, General Psychology. Three credits. Fall, M. W. F. 11; Spring, M. W. F. 11.
Frandsen

112. Educational Psychology of the Elementary School Curriculum. A study from the point of view of psychological theory and research, of the aims, selection and sequence of content, methods of teaching, provisions for individual differences, and measurement of outcomes in the elementary school curriculum. The tool subjects will be emphasized. Prerequisite, General Psychology. Three credits. Fall, T. Th. 11 and W. 1. Spring, T. Th. 11 and W. 1. *Frandsen*

120. Psychology of Social Behavior. A study of the adjustment of the individual to his human environment, including consideration of learning of social habits, social motivation, language, attitudes, and group behavior. These concepts will be applied in understanding such topics as propaganda, war psychology, group prejudices, morale, and leadership. Prerequisite, General Psychology. Three credits. (Not given 1942-43.) *Hadley*

140. Abnormal Psychology. A descriptive and explanatory study of the varieties of mental abnormality—psychoses, psychoneuroses, and minor maladjustments—their causes, the methods of treatment, and the mental hygiene approach in preventing psychological maladjustments. Prerequisite, General Psychology. Three credits. Fall, M. W. F. 10. *Hadley*

200. Psychology of Teaching and Guidance in High School. For teachers with some experience and for those planning to re-enter teaching. The contributions of modern theory and recent research to the following fundamental problems of teaching will be studied: motivation; learning; improvement of study habits; uses of tests in guidance and in measurement of achievement; friendship relationships, leaders, socializing influences of clubs and other groups; personality and conduct problems; and mental health. Concrete applications in the school will be initiated, and problems for masters degree theses will be indicated. Five credits. Begins in Fall and continues for 30 weekly meetings on Mondays from 4:20 to 5:40. Requires registration for two credits each in Fall and Winter and one credit in the Spring. *Frandsen*

205a, b, c. Readings on Current and Special Topics in Psychology. Weekly discussions of topics in current magazines plus independent reading either of some especially significant book or of periodical literature on some specialized topic, selected according to each student's interest. Two credits each quarter. (May be taken 1, 2, or 3 quarters.) Fall, Winter, and Spring, Th. 4. *Hadley*

206. Research on Special Problems in Psychology. Credit and time arranged. *Staff*

SCHOOL OF ENGINEERING, INDUSTRIES AND TRADES

GEORGE D. CLYDE, *Dean*

Departments

Engineering Division 197

Agricultural Engineering 198

Civil Engineering 201

Industrial Division 207

Aeronautics 207

Automotive 211

Metalwork and Mechanical Drawing 216

Radio 218

Woodwork and Building Construction 222

Industrial Education 224

General Information

THE School of Engineering, Industries and Trades consists of two major divisions; namely, Engineering and Industrial. The departments in each of these divisions that offer work leading to graduate or undergraduate degrees, or both, are as follows:

Engineering Division:
- Agricultural Engineering
- Civil Engineering

Industrial Division:
- Aeronautics
- Automotive
- Industrial Education
- Metalwork and Mechanical Drawing
- Radio
- Woodwork and Building Construction

The Civil and Agricultural Engineering curricula were established in 1888 when the College was founded. Automotive, Metals and Woodwork and Building Construction were also established in 1888, but under the name, Mechanic Arts. Degree work in Radio and Aviation was established in 1929. Degree work in Aeronautics was established in 1940. The four-year curricula lead to the degree of Bachelor of Science with mention of the specific courses taken.

Agricultural Engineering. In Agricultural Engineering, students who complete the prescribed four-year course may specialize in irrigation and drainage, soil conservation, farm machinery, rural electrification, or farm structures, by making an appropriate choice of electives.

Civil Engineering. In Civil Engineering, students may choose their major in Irrigation and Drainage, Highways, Structural Design, or Municipal Engineering.

Industrial Division. This division offers four-year degree courses in Aeronautics, Auto Mechanics, Metals and Machine Design, Woodwork and Building Construction, Radio and Industrial Arts. In addition, terminal short courses in the trades and crafts are offered in the fields of Aircraft Engines, Aircraft Mechanics, Auto Mechanics, Machine Shop Practice, Radio, Woodwork and Building Construction, Welding and Auto Body Reconditioning. The degree curricula in the first five fields are designed to train skilled technicians, supervisors, managers, plant operators, and shop and garage foremen, and the sixth to train teachers in Industrial Arts. The terminal short courses are designed to meet the needs of those who cannot remain in college for four years and yet who wish to learn a skilled trade.

Objectives. The purpose of each of the four-year curricula is to afford the student an opportunity to secure the thorough, fundamental, and technical education which is necessary for professional work of the highest grade in Engineering or Industries and Trades, and in addition, insure the development of those physical, mental, moral, and social qualities which are essential to high professional attainment.

The purpose of the terminal curricula is to train skilled mechanics and technicians to work in the trades and industries.

Faculty Advisers. Personal contact is provided for through a system of advisers who confer frequently with the students about their work.

Technical Studies. About 30 per cent of the engineering curricula during the freshman and sophomore years and the greater part during the junior and senior years constitute technical studies. The nature of the technical studies

is fully explained in the descriptions of the several courses in the respective curricula.

Technical Lectures. During the freshman year all engineering students participate in a series of technical lectures delivered by members of the engineering faculty and engineers engaged in professional work who are brought in for this purpose. These lectures constitute a general introduction to the nature of and opportunities in the engineering profession.

Engineering Societies. General professional association and advancement are promoted by the activities of the student branches of the national engineering societies, of which the following are represented either by faculty membership or student chapters, or both: American Society of Civil Engineers, American Road Builders' Association, and American Society of Agricultural Engineers.

Engineering Seminars. Engineering seminars are a feature of the advanced engineering work.

Field Trips. Field trips to local construction projects, engineering works, and industries are scheduled for all Engineering and Industrial Division students. All seniors in Engineering are required to take a supervised field trip covering the major engineering works in the western United States. This trip is scheduled for the last two weeks of the spring quarter. Estimated cost of trip is $30 to $50.

Opportunity for Graduates. The tremendous modern development of industry, the necessity for control and development of natural resources, the rapid advance of transportation and communication, and the development of structures to meet the needs of society give assurance that future graduates in the Engineering and Industrial Division will have ample opportunity for professional employment of an interesting and remunerative character.

Personnel Service. The School of Engineering, Industries and Trades, through its faculty, establishes definite contacts with those industries, corporations, municipal, state, and federal agencies that employ technically trained men. Employment assistance is given the members of each graduating class, the alumni who desire to change positions, and the undergraduates who wish summer employment.

Admission. Engineering and Industrial Division. For general requirements, see statement on page 49. In addition to these general requirements, all students entering the engineering division must present, or take without credit toward graduation, Math. 33 and 34.

All students over eighteen years of age are eligible to follow the terminal short course curricula. Those students who have not graduated from high school take this work as vocational students.

Scholarship. The faculty reserves the right to accept toward graduation only those credits with a grade of C or better.

Graduation. Candidates for graduation must satisfy the prescribed curriculum for their elected major, and in addition, physical education and basic Military Science.

ENGINEERING DIVISION

The Engineering Division offers undergraduate and graduate work in Civil and Agricultural Engineering.

Agricultural Engineering

GEORGE D. CLYDE, O. W. ISRAELSEN, *Professors;* A. C. JACQUOT, *Associate Professor;* JOSEPH COULAM, S. R. EGBERT, E. M. STOCK,* E. B. WAHLGREN, *Assistant Professors;* DEAN K. FUHRIMAN, *Instructor.*

For nearly a century in America, those agricultural problems that have demanded the help of engineers have been solved by civil, mechanical, and electrical engineers. During the last quarter century, the need and value of engineering services in agriculture have grown so rapidly and widely as to demand the development of a major field of engineering designated as Agricultural Engineering.

The Department of Agricultural Engineering offers instruction in courses involving the application of engineering knowledge to the solution of farm problems. The most important of these subjects are farm machinery, farm motors, rural electrification, farm buildings, farm sanitary equipment, soil erosion control, irrigation, and drainage.

A four-year curriculum leading to a Bachelor of Science Degree in Agricultural Engineering is offered. This curriculum includes mathematics, arts and sciences, fundamental subjects in the different engineering departments, agricultural courses selected to familiarize the student with modern agriculture, and a thorough treatment of the Agricultural Engineering courses.

Graduates from this curriculum have opportunity to work in the following fields: (a) the manufacture of farm machinery and equipment; (b) irrigation, drainage, and soil conservation; (c) rural electrification; (d) designers and contractors for farm buildings; (e) teaching, research, and extension in colleges, experiment stations, and in the United States Department of Agriculture; (f) agricultural engineering experts for farm papers and technical magazines; (g) salesmen and field experts in farm equipment; and (h) superintendents or managers of large farms.

Students majoring in Agricultural Engineering should be well versed in farm practices and have a real interest in the agricultural industry.

The Agricultural Engineering Department has available for its use approximately 6,500 sq. ft. of laboratory space. The farm power and machinery laboratory is fully equipped to service, overhaul, and maintain all types of internal combustion engines, farm machinery, and heavy-duty equipment. The farm structures laboratory is arranged to develop exercises in the planning and construction of entire farm structures on the model basis. The facilities of the irrigation, drainage, and soil conservation laboratories are ample to conduct both research and class exercises in all their various divisions. These laboratories are housed in the Engineering and Agricultural Engineering Buildings.

CURRICULUM IN AGRICULTURAL ENGINEERING

Degree: Bachelor of Science in Agricultural Engineering

Freshman				Sophomore			
Course	F	W	S	Course	F	W	S
C. E. R	0	—	—	A. E. 12	4	—	—
C. E. 61, 62	3	3	—	A. E. 14	—	5	—
C. E. 63	—	—	3	C. E. 65	—	—	2
**Math. 35, 46, 97	5	5	5	C. E. 81, 82, 83	3	3	3
Chem. 10, 11	5	5	—	Math. 98, 99	5	5	—
Geol. 3	—	—	5	Phys. 20, 21, 22	5	5	5
Eng. 17, 18, 19	3	3	3	Econ. 51	—	—	5
M. S. 1, 2, 3	1	1	1	M. S. 4, 5, 6	1	1	1
				Approved Elective	—	—	2
	17	17	17		18	19	18

*On Military leave.

**Students with one and a half years of high school algebra and a half year of solid geometry will not be required to take Math. 33 and 34. Math. 35 may be taken during the fall quarter. Math. 33 and 34 do not count toward graduation.

Junior

Course	F	W	S
A. E. 106	4	—	—
A. E. 107	—	3	—
A. E. 116	—	—	5
C. E. 100	2	—	—
C. E. 101, 102, 103	4	5	5
C. E. 108	—	2	—
C. E. 141, 142	4	3	—
C. E. 196	—	3	—
Agronomy 6	—	—	5
Approved Elective	4	—	3
	18	16	18

Senior

Course	F	W	S
A. E. 11	2	—	—
A. E. 15	5	—	—
A. E. 103	—	5	—
A. E. 108	—	—	3
A. E. 109	—	4	—
A. E. 199	—	—	2
C. E. 143	—	—	4
C. E. 145	—	—	3
C. E. 146, 147	3	3	—
C. E. 149	—	4	—
Agr. Econ. 106	—	—	5
Agronomy 108	3	—	—
*Approved Elective	5	2	—
	18	18	17

SUGGESTED ELECTIVES

Course	F	W	S
A. E. 13	—	—	2
A. E. 120	—	—	5
C. E. 150, 194	3	3	—
C. E. 105-105a, 106-107, 148	7	6	3
Agronomy 122	—	—	5
Geo. 103	—	—	5

Description of Courses

AE 3. Surveying for Foresters. Theory of surveying, leveling, traversing, setting slope stakes, simple curves, surveying forest roads, public land division, section lines, topographic mapping, and plane table. To be supplemented by two weeks of summer camp. Five credits. Fall, M. W. F. 8; Lab., F. 2-5 or S. 9-12. *Fuhriman*

AE 4. Dairy Mechanics. A study of the basic equipment found in modern dairy plants; their accessories and upkeep. Four credits. Fall, M. W. F. 10; Lab., F. 2-5. *Wahlgren*

AE 5. Mapping and Office Practice for Foresters. Practice in mapping of the various kinds of surveys that may be encountered by the forester in working up field notes. Prerequisite, one quarter of plane surveying. Three credits. Spring, T. 9; Lab., T. Th. 2-5. *Fuhriman*

AE 10. Irrigation Principles and Practices for Agricultural Students. A study of factors underlying efficient and economic use of water in irrigation. Irrigation methods and their relation to soils and irrigation efficiencies; the plant and irrigation; irrigation water supply, its physical control and measurement. Four credits. Fall, M. W. F. 9; Lab., Th. 8-10, or S. 8-10, or S. 10-12. Spring, M. W. F. 8; Lab., Th. 8-10, or F. 2-4, or F. 4-6. *Jacquot or Wahlgren*

AE 11. Forging and Bench Metal Work. Fundamental operations of forging such as shaping, bending, forge welding, hardening, and tempering. Use of tools and the fundamental bench operations. Two credits. Fall and Winter, T. Th. F. 11-1, or M. W. F. 11-1. *Egbert*

AE 12. Irrigation Practice. Sources and conveyance of irrigation water, farm pumping plants, water measurements, preparation of land for irrigation, soil properties and plant characteristics in relation to irrigation, alkali, duty of water, and irrigation efficiencies. Three lectures and one laboratory. Four credits. Fall, T. W. Th. 10; Lab., W. or F. 10-12. *Fuhriman*

AE 13. Farm Machinery Repair. Applied problems in farm machinery repair and maintenance. Prerequisite, A. E. 11. Two or three credits. Spring, M. W. F. 11-1, or 11-2. *Egbert*

*Students having an average of below B in English 17, 18, and 19 will be required to enroll in English 110.

AE 14. Farm Motors. The principles, operation, care, and repair of internal combustion engines and electric motors. Five credits. Winter, M. W. F. 10; Lab., S. 8-12. *Jacquot or Wahlgren*

AE 14a. Farm Motors for Agricultural Students. The principles, operation, care, and repair of internal combustion engines and electric motors. Three credits. Fall and Winter, T. Th. 2; Lab., T. or Th. 3-6. *Jacquot*

AE 15. Farm Machinery. Principles of mechanics, elements of design, and materials as applied to farm machinery. The operation, adjustment, and care of the various types of agricultural machines. Five credits. Fall, M. W. F. 10; Lab., F. 2-6. *Jacquot*

AE 15a. Farm Machinery for Agricultural Students. Principles of mechanics and materials as applied to farm machinery. The operation, adjustment, and care of the various types of agricultural machines. Three credits. Winter and Spring, M. W. 2; Lab., M. or W. 3-6. *Jacquot*

AE 103. Rural Electrification. An intensive course designed to prepare students for work in the field of Rural Electrification. Electricity and electrical equipment for the farm, including farm wiring, electric motors, and special applications of electricity for improving production and efficiency. Prerequisite, Phys. 21. Five credits. Winter, M. W. F. 8; Lab., S. 8-12. *Wahlgren*

AE 105. Farm Woodwork and Buildings for Agricultural Students. Location, planning, and construction of farm buildings. Wood and metal preservatives, fences and fencing, and the farm workshop. Prerequisite, W. W. 61b and A. E. 11. Five credits. Fall and Spring, M. W. F. 8; Lab., T. Th. 9-12. Extra lab. sections arranged. *Coulam*

AE 106. Farm Structures. Duty and economics of farm buildings; insulation as it involves heating and ventilating; mechanics of farm buildings; types of construction for frames and roofs; building materials; location and planning of the farmstead; and study of the fundamental requirements and design of farm buildings common to western agriculture, including the farm home. Four credits. Fall, M. W. F. 11. One 2-hour lab. arranged. *Wahlgren*

AE 107. Farm Structures Laboratory. Exercises in the planning and construction of entire farm structures on the model basis. Specifications, cost estimates, analysis of important stresses, and safe dimensions for major construction details. Prerequisite, A. E. 106. Three credits. Winter, Th. 10; Lab., M. W. 10-1. *Coulam*

AE 108. Engineering Aspects of Soil and Water Conservation. Extent and kinds of erosion, rate of water absorption, soil erodibility as affected by rainfall, soil vegetation, and cultural practices. Erosion control structures, including surveys for and hydraulic design of terraces, terrace outlets, and soil-saving dams. Tillage and farming methods, strip-cropping. Erosion and alkali problems on irrigated land. Three credits. Spring, M. W. F. 11. One field trip. *Wahlgren*

AE 109. Farm Utilities. Modern methods of heating, lighting, ventilating, water supply, and farm sanitation; and farm electrical appliances. Four credits. Winter, M. W. F. 9; Lab., F. 2-5. *Wahlgren*

AE 116. Farm Tractors and Repair. A study of design, operation, and performance of the farm tractor. Efficiencies and ratings as determined by the Nebraska Tractor Tests. Tractor troubles and overhauling. Prerequisite, A. E. 14 or its equivalent. Five credits. Spring, M. W. F. 10; Lab., S. 8-12. *Jacquot*

AE 120. Air conditioning and Refrigeration. The principles of air conditioning as applied to farm buildings; the relation of theoretical principles to the design, construction, and management of modern equipment; the principles involved in modern farm refrigeration processes and a comparison of the various commercial types and their applications. Five credits. Spring, Daily 9. *Wahlgren*

AE 199. Agricultural Engineering Seminar. Current topics in planning, financing, design, and construction of engineering projects of interest to agricultural engineers. Required of all seniors. Two credits. Spring, T. Th. 10.
Wahlgren

AE 212. Problems in Irrigation Agriculture. Advanced work on the major problems in agriculture under irrigation, including management of irrigation projects, consolidation of irrigation companies, formation of soil conservation districts, irrigation efficiencies, erosion control, irrigation and the alkali problem. Instruction in residence or in absentia. Each quarter. Time arranged. Credit according to work done. *Israelsen*

AE 230. Special Problems in Agricultural Engineering. Independent study of chosen problems in agricultural engineering, given under the direction of a member of the department staff. The student is expected to develop his own initiative in pursuing these problems. Standard formal typewritten reports are required. Prerequisite, Junior standing. Each quarter. Time and credit arranged. *Jacquot*

AE 249. Advanced Irrigation Institutions and Management. Problems in laws governing the acquirement and adjudication of water rights, and in the distribution of water according to established rights; the improvement of irrigation and drainage enterprises; and operation problems. Instruction in residence or in absentia Each quarter. Time arranged. Credit according to work done. *Clyde*

Civil Engineering

GEORGE D. CLYDE, H. S. CARTER, O. W. ISRAELSEN, H. R. KEPNER, *Professors;* A. C. JACQUOT, *Associate Professor;* E. M. STOCK,* E. B. WAHLGREN, *Assistant Professors;* D. K. FUHRIMAN, *Instructor.*

Civil Engineering consists of the economic application of the laws, forces, and materials of nature to the design and construction of irrigation and drainage systems, highways, railways, bridges, buildings, dams, water supply systems, hydroelectric plants, and many other works which are a part of the requirements of civilization today.

The curriculum in Civil Engineering has been carefully planned and is accredited by the Engineering Council for Professional Development. It is based upon a thorough training in English, Mathematics, Physics, and Chemistry, combined with drawing, surveying, mechanics, hydraulics, and economics. Upon this substructure is built a superstructure consisting of the applications of these subjects to the many phases of Civil Engineering.

No summer camp is required, but academic work is supplemented by numerous local field trips during the junior year, and a major field trip of approximately two weeks' duration during the senior year. These field trips provide opportunity for first hand study of projects under investigation, construction and after completion. All field trips are carefully planned and are carried out under the joint direction of the Faculty and the representatives of the work being inspected.

An analysis of the status of the Civil Engineering graduates from the Utah State Agricultural College shows that approximately 80 per cent are in federal, state, city, or county positions, and about 20 per cent in private practice or working for private corporations. Finding employment for graduates has never been a problem at this institution.

The Departments of Engineering are housed in the Engineering Building where well-equipped laboratories and classrooms provide ample facilities for the work in engineering. The irrigation and hydraulic laboratories are equipped

*On military leave.

with pumps, turbines, water measuring devices, pipe lines, and models of hydraulic structures. A model hydraulic laboratory demonstration unit is available for instruction and laboratory use. The soil mechanics laboratory is equipped with the latest machines and instruments for determining the engineering properties of soil. The laboratories are equipped for testing both metallic and non-metallic materials. Standard testing equipment for determining the physical properties of timber, metals, clay products, concrete and bituminous materials are available. The structural laboratories are equipped for demonstration and investigation of statically indeterminate structures using Begg's method and the Photo-elastic Polariscope.

CURRICULUM IN CIVIL ENGINEERING

Degree: Bachelor of Science in Civil Engineering.

Freshman

Course	F	W	S
C. E. 61, 62	3	3	—
C. E. 63	—	—	3
Chem. 10, 11	5	5	—
Eng. 17, 18, 19	3	3	3
*Math. 35, 46, 97	5	5	5
Geology 3	—	—	5
C. E. R	0	—	—
M. S. 1, 2, 3	1	1	1
	17	17	17

Sophomore

Course	F	W	S
C. E. 81, 82, 83	3	3	3
Math. 98, 99, 122	5	5	3
Econ. 51 or Hist. 17	—	5	—
Physics 20, 21, 22	5	5	5
A. E. 12	4	—	—
M. S. 4, 5, 6	1	1	1
C. E. 65	—	—	2
Electives	—	—	3
	18	19	17

Junior

Course	F	W	S
C. E. 101, 102, 103	4	5	5
C. E. 141	4	—	—
C. E. 142	—	3	—
C. E. 143	—	—	4
C. E. 100, 108	2	2	—
C. E. 120	4	—	—
C. E. 123	—	—	3
C. E. 148	—	—	3
C. E. 197	3	—	—
Eng. 110	—	4	—
C. E. 196	—	3	—
Elective	—	—	3
	17	17	18

Senior

Course	F	W	S
C. E. 105	5	—	—
C. E. 105a	2	—	—
C. E. 106	—	4	—
C. E. 107	—	2	—
C. E. 192	—	—	3
C. E. 190	3	—	—
C. E. 111	—	—	4
B. A. 100	—	3	—
C. E. 150	3	—	—
Geol. 103	—	—	3
C. E. 149	—	4	—
C. E. 198	—	2	—
Electives	3	3	6
	16	18	16

SENIOR ELECTIVES

Course	F	W	S	Major
C. E. 112, 113, 114	3	3	3	Structural Engineering
C. E. 124, 125, 127	3	3	3	Highway Engineering
C. E. 146, 147, 145	3	3	3	Irrigation Engineering
Bact. 10, C. E. 144, 194	3	3	3	Municipal Engineering

DESCRIPTION OF COURSES

CE R. Orientation in Engineering. A discussion of the various phases of Civil and Agricultural Engineering. Lectures by staff members and practicing engineers. Required of all students in engineering. No credit. Fall, F. 8.
Staff

*Students deficient in high school mathematics Algebra (b) and Solid Geometry, must register for Math. 34 during the fall quarter and Math. 33 during the spring quarter of the freshman year. Math. 33 and 34 do not count toward graduation.

*Candidates for advanced military will be considered special cases.

CE 60. Engineering Drawing for Foresters. Use of instruments, lettering, applied geometry, elements of orthographic projection, and pictorial drawing. Two credits. Fall, W. 4; Lab., M. W. 1-3. *Wahlgren*

CE 61. Engineering Drawing. Use of instruments, lettering, applied geometry, orthographic projection, and technical sketching. Three credits. Fall, M. 8; Lab., M. W. F. 3-5 or T. Th. 2-5; Winter, 1 hour lecture, arranged; Lab., M. W. or T. Th. 2-5. *Wahlgren*

CE 62. Advanced Engineering Drawing. Pictorial representation, conventional representation, dimensioning, working drawings, and lettering. Three credits. Winter, M. 8; Lab., M. W. or T. Th. 2-5; Spring, 1 hour lecture arranged; Lab., T. Th. 2-5. *Wahlgren*

CE 63. Descriptive Geometry. Principal and auxiliary views; points, lines, and planes; developments, intersections, and warped surfaces; mining problems. Three credits. Spring, T. 8; Lab., M. W. 2-5. *Wahlgren*

CE 65. Engineering Problems. Practical Engineering problems solved by the use of coordinated applications of algebra, trigonometry, calculus, and physics. Methods of computation include the use of logarithms, slide-rule, and calculating machines. Special emphasis is placed upon the development of good habits of work and study. Prerequisites, Math. 98, Physics 22. Two credits. Spring, Lab., T. 10, Th. or F. 10-12. *Carter*

CE 81. Plane Surveying. Use of tape, hand level, level, transit, compass, etc., in field problems. Differential and profile leveling, traversing, plotting, mapping, and care of engineering instruments. Prerequisites: algebra and trigonometry. Three credits. Fall, T. 8, Lab., M. W. or T. Th. 2-5. *Carter*

CE 82. Mapping and Office Practice. Practice in mapping of the various kinds of surveys that may be encountered by the engineer in working up field notes. Prerequisite, one quarter of plane surveying. Three credits. Winter, W. 1; Lab., M. W. F. 3-5. *Fuhriman*

CE 83. Plane Surveying. Topographical surveying and mapping, introduction to route surveying, cross-sectioning, some rural and city surveying, and solar observations. Prerequisite, CE 81. Three credits. Spring, T. 8; Lab., M. W. or T. Th. 2-5. *Carter*

CE 100. Metals and Heat Treatment. This course is a study of the physical properties, composition, constituents, commercial sizes, and heat treatment of metals used in industry. The metals and heat treatment studied include cast iron, wrought iron, plain carbon steel, alloy steel, brasses, bronzes, aluminum alloys, and magnesium alloys. Two credits. Fall, T. Th. 10. *Newey*

CE 101. Engineering Mechanics. Statics. Resultants of force systems, equilibrium of force systems, friction, center of gravity, moment of inertia. Prerequisite, Math. 99. Four credits. Fall, T. Th. 8; Lab., T. Th. 2-5. *Kepner*

CE 102. Engineering Mechanics. The first part of the course covers kinematics and kinetics of bodies in translation, rotation, and plane motion, relative motion, work and energy, impulse and momentum. The latter part of the course covers properties of engineering materials, stress and strain due to central and torsional loads. Prerequisite, CE 101. Five credits. Winter, M. W. F. 8; Lab., M. W. 2-5. *Kepner*

CE 103. Engineering Mechanics. Strength of materials, stresses in beams, deflection, combined axial and bending loads, compression members, principal stresses, fatigue, impact and energy loads, and special topics. Prerequisite, CE 102. Five credits. Spring, M. W. F. 8; Lab., T. Th. 2-5. *Kepner*

CE 105. Structural Theory. The application of the principles of mechanics to the stress analysis of common structures and the design of structural details. Prerequisite, CE 103. Five credits. Fall, Daily 9. *Kepner*

CE 105a. Structural Design. Design calculations and drawings for simple structures. This course to be taken concurrently with CE 105. Two credits. Fall, M. W. 2-5. *Kepner*

CE 106. Reinforced Concrete Theory. Principles of slab, beam, and column design. Use of specifications and codes. Prerequisite, CE 103. Four credits. Winter, M. T. W. Th. 9. *Kepner*

CE 107. Reinforced Concrete Design. Computations and design drawings for typical members of reinforced concrete structures. To be taken concurrently with CE 106. Two credits. Winter, T. Th. 2-5. *Kepner*

CE 108. Materials of Engineering. Strengths, composition, and proper use of wood, plaster, glass, glue, paint, brick, cement, sand, and gravel. Mechanical analysis curves, water-cement ratio, cement and concrete testing. Two credits. Winter, T. 9; Lab., T., Th., or F. 2-5. *Carter*

CE 111. Structural Design. Analysis and design calculations and drawings for steel and timber structures. Prerequisites, CE 105a. Four credits. Spring, M. W. F. 10; Lab., M. 2-5. *Kepner*

CE 112. Construction Methods. A study of standard methods used in the fabrication and erection of modern structures. Three credits. Fall, M. W. F. 8. *Kepner*

CE 113, 114. Statically Indeterminate Structures. A survey of classical and modern methods of design and analysis of steel and concrete structures having one or more redundant elements. Prerequisite, CE 105. Three credits. Winter, T. Th. 8, Lab., F. 2-5; Spring, T. Th. 9, Lab., W. 2-5. *Kepner*

CE 120. Roads and Pavements. Elements of Highway Engineering; types of roads and pavements, methods of construction and maintenance, jurisprudence, and finance. Prerequisite. CE 83. Four credits. Fall, M. T. W. F. 11. *Carter*

CE 123. Route Surveying. Methods used in railway, highway, street, canal, pipe-line, and similar project surveys. Theory of curves and earthwork computations. Prerequisite, CE 120. Three credits. Spring, M. W. 11; Lab., M. or F. 2-5. *Carter*

CE 124. Street and Highway Traffic Control. Collection and analysis of traffic data; causes and remedies for traffic congestion and accidents; traffic control devices; illumination of streets and highways; economics and administration of traffic control. Prerequisite, CE 120. Three credits. Fall, T. Th. 10; Lab., F. 2-5. *Carter*

CE 125. Highway Design. Theory and practice in the design of rural highways. Preparation of highway plans and profiles, mass diagrams, right-of-way surveys, and drainage features. Prerequisite, CE 123. Three credits. Winter, T. Th. 8; Lab., W. 2-5. *Carter*

CE 127. Municipal Engineering and City Planning. City streets, boulevards, and transportation systems; super-highway projects. Prerequisite, CE 125. Three credits. Spring, M. W. F. 8. *Carter*

CE 141. Fluid Mechanics. A general course in Fluid Mechanics, including the fundamental principles of hydrostatics and hydrodynamics applied to flow of water, air, and other fluids. Prerequisites, Physics 21 and Mathematics 99. Four credits. Fall, M. W. F. 9; Lab., M. 2-5. *Clyde or Fuhriman*

CE 142. Hydraulics and Hydraulic Problems. Problems in fluid pressure and equilibrium; flow of water through orifices, over weirs, in open and closed channels; turbulent and stream-line flow, non-uniform flow, and water measurement. Prerequisite, CE 141. Three credits. Winter, T. Th. 11; Lab., T. or Th. 2-5. *Clyde or Fuhriman*

CE 143. Hydrology and Meteorology. The course treats of the occurrence, utilization, and control of water; weather and climate as they affect the water

cycle; precipitation, evaporation, transpiration, and runoff; methods of collection and use of hydrologic data; extension of precipitation and runoff records; precipitation-runoff relations, mass diagrams, duration curves, and flood flows; water supply analysis and stream flow forecasting. Four credits. Spring, M. W. F. 10; Lab., W. 2-5. *Clyde or Fuhriman*

CE 144. Water Supply and Purification. Elements of design, construction, and maintenance of waterworks systems and water purification plants. Three credits. Winter, M. W. F. 11. Prerequisite, Bact. 10. *Kepner*

CE 145. Design of Drainage Systems. Drainage design in relation to soil properties, location of drains, flow into tile, properties of tile, drainage construction. Prerequisites, AE 12 and CE 142. Three credits. Spring, Lect., T. Th. 8; Lab., S. 8-12. *Fuhriman*

CE 146. Design of Water Conveyance Irrigation Structures. Channel alignment and cross section, silt control, conveyance losses, transitions, linings, flumes, and pipes. Prerequisites, CE 142 and 143. Three credits. Fall, Lect., T. Th. 11; Lab., T. 2-5. *Fuhriman*

CE 147. Design of Water Control Irrigation Structures. Dams, diversion works, sluices, drops and chutes, spillways, wasteways, headgates and check gates. Prerequisite, CE 146. Three credits. Winter, Lect., M. W. 11; Lab., M. 2-5. *Fuhriman*

CE 148. Hydraulic Machinery. Design of machinery used in generation of power and in pumping. Tangential and reaction turbines and centrifugal pumps. Installation and operation. Prerequisite, CE 142. Three credits. Spring, T. Th. 11; Lab., W. 2-5. *Fuhriman*

CE 149. Irrigation Institutions and Management. Laws governing the acquirement, adjudication, and distribution of water rights; irrigation and drainage enterprises; valuation of water rights; delivery of water to irrigators; annual water charges; operation and maintenance organizations and costs. Four credits. Spring, M. T. W. F. 10. *Clyde or Fuhriman*

CE 150. Soil Mechanics for Foundations and Earth Work. Basic physical properties of soils, with particular reference to engineering problems. Specific gravity, porosity, permeability, bearing capacity, transporting power of water for soils. Prerequisites, CE 102 and Math. 99. Three credits. Fall T. Th. 8; Lab., T. or Th. 2-5. *Israelsen*

CE 181. Photogrammetry. The science or art of utilizing photographs of the earth's surface for making surveys, maps and land utilization studies. Planimetric maps, mosaics and restituted photographs, their construction and uses. Prerequisite, CE 83 or senior standing in forest, range or wildlife management, geology, landscape architecture, aviation or advanced military science. Three credits. Winter, M. W. F. 11. *Carter*

CE 182. Higher Surveying. United States Geological Survey and United States Coast Geodetic Survey Methods. Prerequisites, CE 83 and Math 99. Three credits. Spring, T. 9; Lab., T. Th. or W. F. 2-5. *Carter*

CE 190. Contracts and Specifications. Synopsis of the law of contracts. Typical specifications and contracts. Prerequisite, senior standing in engineering. Three credits. Fall, M. W. F. 10. *Carter*

CE 192. Engineering Economy. A study of methods of estimation of costs of engineering projects. The determination of the most economical arrangement of structural units. The selection of the most economical structural types for given conditions. Problems in the finance of engineering projects. Prerequisite, senior standing in engineering. Three credits. Spring, M. W. F. 9. *Carter*

CE 194. Sewerage and Sewage Disposal. Principles of design, construction, and maintenance of sewer systems. Treatment of sewage by physical, chemi-

cal, and biological action and methods of final disposal. Prerequisites, CE 141, CE 144, Bact. 10. Three credits. Spring, M. W. F. 11. *Kepner*

CE 196. Elements of Heat Power Engineering. Fundamental consideration of fuels, combustion, steam boilers, furnaces, chimneys, steam engines, steam turbines and auxiliaries, and internal combustion engines. Prerequisite, Math. 98. Three credits. Winter, M. W. F. 9. *Jacquot*

CE 197. Electrical Machinery. Theory and performance of electrical machinery. Power transmission and distribution. Industrial applications. Prerequisite, Physics 22. Three credits. Fall, M. W. F. 8. *Jacquot*

CE 198. Civil Engineering Seminar. Current topics in financing, design, and construction of engineering projects of interest to civil engineers. Required of all seniors. Two credits. Winter, T. Th. 11. *Carter and Kepner*

CE 200. Dams. Advanced work in the design of dams for storage reservoirs. High earth dams and masonry dams given special attention. For graduate students. Open to specially prepared seniors. Two credits. Fall. Time arranged. *Staff*

CE 201. Advanced Hydraulic Design. Advanced work in design of pipe lines, flumes, spillways, diversion weirs, headgates, wasteways, sluices, silt control, and other hydraulic structures. For graduate students. Open to specially prepared seniors. Prerequisites, CE 147 and 148. Two credits. Winter. Time arranged. *Staff*

CE 202. Advanced Structural Analysis. A study of modern methods of structural analysis, including practice with Begg's Deformeters and the Photoelastic Polariscope. Prerequisites, CE 113 and 114. Time and credit arranged. *Kepner*

CE 203. Advanced Structural Design. Design and cost comparison of timber, steel, and masonry structures. Prerequisite, CE 111. Time and credit arranged. *Kepner*

CE 220a, b, c. Advanced Highway Engineering. Economics of location and design; selection, improvement and maintenance; traffic control; administration, finance and jurisprudence; as applied to rural and city highways. Prerequisite, graduate standing in civil engineering. Time and credit arranged. *Carter*

CE 241. Irrigation and Drainage Research. The regular research activities of irrigation and drainage staff members afford excellent opportunities for direction of student research projects. A qualified student may elect a problem in any phase of irrigation or drainage in the field of Civil Engineering for study at the College or elsewhere. Results in research may be used in part to meet the requirements of an advanced degree. Credit according to work done. Each quarter. Time arranged. (See also C. E. 201.) *Staff*

CE 242. Advanced Fluid Mechanics. Dynamic lift and propulsion, flow of viscous fluids, resistance of immersed and floating bodies, compressible fluids, and dynamic similarity. Prerequisites: CE 141 and 142. Three credits. Any quarter, time arranged. *Israelsen*

CE 250. Advanced Soil Mechanics. Theoretical and laboratory aspects of basic physical properties of soils, with applications to soil problems in agriculture and in engineering. Students are assigned individual laboratory studies. Time arranged. Any quarter. From two to five credits according to accomplishments. *Israelsen*

CE 298. Graduate Thesis. Five to eleven credits. Each quarter. Time arranged. *Staff*

Industrial Division

ERNEST C. JEPPSEN, *Local Director of Industrial Education*, E. A. ROSS, *Professor*, AARON NEWEY, S. R. STOCK*, *Associate Professors*, S. R. EGBERT, D. A. SWENSON, FREDERICK PREATOR, JOSEPH COULAM, LARRY S. COLE, *Assistant Professors*, LEROY FRANCE, EDWARD PAYNE, ANTONE B. KEMP, ..., ..., *Instructors*.

The Industrial Division is one of two divisions in the School of Engineering, Industries, and Trades. It is comprised of six departments, namely: Aeronautics, Automotive, Metalwork, Radio, Woodwork, and Industrial Education. This division offers undergraduate work in Industrial Arts, Trades and Industries, and graduate work in Industrial Education.

The Industrial Arts program has two major objectives. The first is to provide experiences in a laboratory of industry for those students of the college wishing to explore one or more of the many fields offered. It is part of a general education program rather than a specialized technical training. It provides an opportunity for any student to study and practice the arts of industry that he may better interpret the modern world and evaluate its products. In providing this opportunity, the Industrial Arts program becomes a service department for all the schools on the campus. The second objective is to train teachers and supervisors in Industrial Arts for the secondary schools of the state. A state certificate is given at the completion of the four-year curriculum.

The Trades and Industries program consists of technical institute training designed to prepare skilled tradesmen and specialized technicians in industrial fields. Present-day industrial projects are designed by the engineer, interpreted and supervised by technicians, and constructed by skilled tradesmen. The three objectives of this program are: First, to provide a high type of two-year trade training in the major industrial occupations in our state; second, to make available advanced technical training for those students completing the two-year course and desiring to continue on a four-year program either at once or after having had some trade experience; third, to provide teacher training in the field of trades and industries in order that teachers of trade courses in the state may work toward a Bachelor of Science or an advanced degree.

The Master of Science and the Master of Education curricula are available for students wishing to do graduate study in Industrial Education.

Aeronautics

E. A. ROSS, *Professor*.

The Department of Aeronautics offers instruction for the thorough training of skilled aircraft and engine mechanics and aircraft technicians.

The college is a fully certificated air agency of the Federal Government. It holds certificate No. 1175 covering the training of combined aircraft and aircraft engine mechanics. Its course of study, equipment and instructors have been certificated giving it a rating as an approved school for the training of aircraft and engine mechanics.

The facilities consist of fully equipped aircraft laboratories and class rooms covering approximately 22,000 square feet of area in the Mechanic Arts Building, Engineering Building, Maintenance Building, and the Aircraft Engine Shops. Complete laboratories and equipment for instruction in aircraft engines, propellers, general aircraft mechanics, aircraft electrics, aircraft hydraulic

*On leave.

equipment, and aircraft instruments are available. All of these laboratories are equipped with the latest type of engines, propellers, instruments, and other units necessary for training in these fields; such as electro-plating, magneto and carburetor testing, and sandblast equipment. Supplementary to the aircraft laboratories are the Welding, Machine Shop, Sheet Metal, and Woodwork Departments. A modern dope and paint room and storage for dope and paint are provided as an accessory to the aircraft laboratories. Three modern airplanes, one of which is a Martin B-10 Bomber, completely equipped, are available for instructional purposes.

CURRICULUM IN AERONAUTICS

Degree: Bachelor of Science in Aeronautics.

Freshman Year

Course	Credit F	Credit W	Credit S
Aero. 1, 2, 3	3	3	3
M. W. 51a, 51b, 52d	2	2	2
*Math. 35, 46, 97	5	5	5
Eng. 17, 18, 19	3	3	3
Aero. 1a, 2a, 3a	3	3	2
C. E. 63	—	—	2
M. S. 1, 2, 3	1	1	1
	17	17	18

Sophomore Year

Course	Credit F	Credit W	Credit S
Math. 98, 99	5	5	—
Phys. 20, 21, 22	5	5	5
C. E. 61, 62, 65	3	3	2
Aero. 11, 12, 13	3	3	3
Aero. 13a	—	—	3
M. W. 93	—	—	2
M. S. 4, 5, 6	1	1	1
	17	17	16

Junior Year

Course	Credit F	Credit W	Credit S
C. E. 101, 102, 103	4	5	5
C. E. 141, 142	4	3	—
C. E. 100, 108	2	2	—
Phys. 145	3	—	—
Aero. 101, 120	3	3	—
Chem. 10, 11	—	5	5
Eng. 110	—	—	4
R. A. 101	—	—	5
	16	18	19

Senior Year

Course	Credit F	Credit W	Credit S
C. E. 105, 192	5	3	—
C. E. 105a	2	—	—
Aero. 102, 103, 104	3	3	3
Aero. 121, 122, 123	3	3	3
Aero. 161, 162	—	3	5
Aero. 130	—	—	2
Phys. 153, 160	—	3	3
B. A. 100	—	3	—
Elect.	4	—	—
	17	18	16

DESCRIPTION OF COURSES

The following courses listing (Technical, Shop and Related) offer, respectively, the technical instruction, shop practice and closely related information for the particular trade. The related information may include Trade Math. WW 6, 7, 8 and Trade Problems, Auto 48, 49, 50 or Trade English, English 17, 18, 19 and Trade Drawing, MW 91, 92, 96.

Note: 2 and 3 unit credit can be given on the following courses: 1, 1a, 2, 2a, 3, 3a, 11, 11a, 12, 12a, 13, 13a. The two unit credit classes are given on Tuesday and Thursday at scheduled time. Three unit credit courses are given on Monday, Wednesday and Friday at scheduled time.

AERO 1, 1a. Aircraft Engines. (Technical, Shop and Related.) Training in the construction, operation and repair of modern aircraft engines, under the supervision of a certified aircraft engine mechanic. The units covered are power sections, blower sections, accessory sections, cylinders and reduction gears. Fall quarter, Technical, five credits. Daily 9. Shop, five credits. Daily 2-5.

Staff

*Students deficient in high school mathematics Algebra (b) and Solid Geometry, must register for Math. 34 during the Fall quarter and Math. 33 during the Spring quarter of the freshman year.

AERO 2, 2a. Aircraft Engine Fuel Systems. (Technical, Shop and Related.) raining in the construction, operation and repair of modern aircraft engine el systems. The units of this course include gasoline tanks, fuel systems, rburetors, manifolds, automatic controls, intensifier systems, superchargers nd injection systems. Winter quarter. Technical, five credits. Daily 9. Shop, ve credits. Daily 2-5. *Staff*

AERO 3, 3a. Aircraft Engine Electrics. (Technical, Shop and Related.) raining in the construction, operation and repair of modern aircraft engine ectrical systems. The units of this course include ignitions, starting and gen- rating systems and special electrical devices and controls. Special emphasis also given the actual run-up testing, trouble shooting and maintenance of the verhauled engine and its accessories. Spring quarter. Technical, five credits. aily 9. Shop, five credits. Daily 2-5. *Staff*

AERO 11, 11a. Aircraft Sheet Metal. (Technical, Shop and Related.) Train- g in the construction, repair and maintenance of aircraft sheet metal struc- ures. The units include layout, cutting, bending, forming, bumping, riveting, eat treatment, plating and painting of ferrous and non-ferrous metals. Fall uarter. Technical, five credits. Daily, 7:45-9. Shop, five credits. Daily, 9-12. *Ross*

AERO 12, 12a. Aircraft Construction. (Technical, Shop and Related). Train- g in the construction, operation and repair of the airplane. The units include ood structures, steel structures, fabric work and finishing, controls, landing ars and motor mounts. Winter quarter. Technical, five credits. M. W. Th. F. 5-9. Shop, five credits. Daily 9-12. *Ross*

AERO 13, 13a. Aircraft Maintenance. (Technical, Shop and Related.) Train- g in the maintenance of the modern airplane. The units include assembly, mmeling, alignment rigging, inspection, servicing of all the component parts the airplane. Also special emphasis will be given Civil Air Board Regula- ns. Spring quarter. Technical, five credits. Daily 7:45-9. Shop, five credits. ily 9-12. *Ross*

AERO 14. Aircraft Instruments. (Technical and Shop.) A thorough study all types of Aircraft instruments and radio, their functions and purpose. In- llation and test of all types of instruments and radio in common use. Three dits. Spring, Daily 12-1. *Staff*

AERO 101. Introduction to Airplane Design. Study of the types of airplane uctures, parts, fittings and systems; their design and method of manufacture, cessing and cost. Three credits. Fall quarter. M. W. F. 1. *Staff*

AERO 102. Airplane Structures. Adaptation of structural design to the air- ne. A subject covering the determination by graphical and analytical methods design loads, reactions, bending moments and shears. Three credits. Fall rter, M. W. F. 8. *Staff*

AERO 103. Advanced Airplane Structures. Strength of materials, metallic non-metallic, used in aircraft construction. Determination of stress con- ration about fillets and holes. Methods of analysis employed by designers ll-metal aircraft. Three credits. Winter quarter. M. W. F. 1. *Staff*

AERO 104. Airplane Construction and Maintenance. Study of latest meth- in current use for developing analysis of skin stressed aircraft. Theory of icity and reinforced sheet in compression. Problems involved in the design n airplane selected by the group. Three credits. Spring, M. W. F. 8. *Staff*

AERO 119. Instruments. A study of instruments used in airplanes and to rol modern air transportation. Three credits. Fall. Time arranged. *Staff*

AERO 120. Introductory Aeronautics. A study of the field of aeronautics, ding the dynamics of perfect fluids, particles, and solids. Three credits. ter quarter, M. W. F. 9. *Staff*

AERO 121. Theory of Flight. Study of air flow characteristics about air foils, airfoil combinations and aircraft propellers. Three credits. Fall, M. W. F. 10. *Staff*

AERO 122. Advanced Theory of Flight. The general theory of control and stability. Flight demonstration for each student is suggested but not required. Three credits. Winter quarter, M. W. F. 11. *Staff*

AERO 123. Performance Problems of the Airplane. Study of airplane performance, selection of the type of design to be used for a given service, military or commercial. Experimental research, in a chosen field. Three credits. Spring quarter. M. W. F. 10. *Staff*

AERO 124. Aerial Transportation. Study of national and international air lines. Economic and legal factors involved in air transport. Three credits. Spring quarter. Time arranged. *Staff*

AERO 125. Air Transport Control. A study of management and operation of airports and air traffic control. Three credits. Winter quarter. Time arranged. *Staff*

AERO 130. Aeronautics Seminar. Current topics in production methods, cost, design, supply and organization of interest to engineers. Two credits. Spring quarter. T. Th. 8. *Staff*

AERO 161, 162. Model and Wind Tunnel. This course is a study of model aeroplane development and calculation of lift, balance and control. Fall quarter, 3 credits. Tech. T. Th. 1. Lab., W. 2-5. Spring, 5 credits. Tech. T. Th. 9. Lab., M. W. F. 2-5. *Staff*

CIVILIAN PILOT TRAINING GROUND SCHOOL

The CPT Ground School is a part of the Civilian Training program sponsored by the Civil Aeronautics Administration under the Department of Commerce, Washington, D. C. It is the purpose of this program to train a large number of young men as Civilian Pilots.

The Civil Aeronautics Administration offers scholarships to worthy students who meet the required physical and educational requirements. The entire cost of the flight training is paid by the Civil Aeronautics Administration. At the present time, four programs are offered. The first, or primary course, consists of minimum of ninety class hours of ground school work and thirty-five to fifty hours of actual flight training. Upon satisfactory completion of this course, both ground school and flight training students are issued a Private Pilot's License.

The second program, advanced training, and known as the Restricted Commercial course, consists of a minimum of 108 class hours of ground school with forty to fifty hours of flight training in a type S1 ship, powered with a 225 H.P. motor.

All students who have graduated from High School and who are over 18 years of age are eligible to make application for Civilian Pilot Training.

Aero 35. Civil Aeronautics Ground School (primary) Civil Air Regulations and Principles and Theory of Flight. The material covered in this course is standard, prescribed material required by the Civil Aeronautics Administration. A minimum of twenty-four class hours must be spent on Civil Air Regulations and a minimum of 18 class hours must be spent on Theory of Flight and Airplane operation. Five credits. Fall Quarter. Section 1, Daily at 8; Section 2, Daily at 10. Winter Quarter. Section 1, Daily at 8; Section 2, Daily at 10. *Allen and Page*

Aero 36. Civil Aeronautics Ground School (primary) Meteorology and Navigation. The work in Meteorology and Navigation, also prescribed courses, require a minimum of twenty-four class hours in each subject. Text books are

urnished by the C.A.A. for all courses. Students are required to pass successilly, federal examinations in all ground school subjects as well as the course nd also to receive a private pilot's license. Five credits. Fall quarter. Secion 1, Daily at 9; Section 2, Daily at 11. Spring quarter. Section 1, Daily at ; Section 2, Daily at 10. *Allen and Payne*

Note: If the student takes the Fall training, both RA 35 must be taken all quarter. If the student takes the Spring training, RA 35 must be taken Winter quarter and RA 36 must be taken Spring quarter.

Aero 135. Advance C.A.A., Restricted Commercial Aircraft, Power Plants nd Engines. An intensive course in Aircraft and Airplane motors. The course ill include a study of aircraft construction, materials rigging, and inspection. he principles of operation of all types of internal combustion engines used in ircraft operation will be covered. It will also include valve operating mechanms, carburetion, blowers, supercharges, lubrication and fuels. Starting mechisms, propellers, and power plants maintenance. Five credits. Fall quarter, ily at 10. Spring quarter, Daily at 10. *Allen and Payne*

Aero 136. Advanced C.A.A., Restricted Commercial, Aerodynamics, Navition and Radio. The secondary course, or Restricted Commercial is an intenve technical course covering aircraft structures and materials. Advanced rk in Navigation, including Radio and Celestial Navigation, is covered. ve credits. Fall quarter, Daily at 8. Winter quarter, Daily at 8. *Allen and Payne*

Note: All students taking Fall training must take Aero 135 and 136 Fall arter. Students taking Spring training must take Aero 135 Winter quarter d Aero 136 Spring quarter.

Automotive

C. JEPPSEN, *Associate Professor;* S. R. EGBERT, *Assistant Professor;* ROY FRANCE, ANTONE B. KEMP, ..., *Instructors.*

This department offers work in automotive mechanics, auto body and paint nditioning, forging, acetylene and electric welding. It provides general rses in Industrial Arts and specialized courses in Trades and Industries. The eral industrial arts courses open to any student are Auto 51, 52, 53, 61, 62, 82, 83, 84, 91, 92, 93, and 162. The remaining courses are in the nature of cialized technical training to be taken in the order as indicated in the course ription.

The Automotive Department is located in the center of the Trades and stries Building, and occupies a floor space of approximately 11,000 square . It is fully equipped with the latest tools and shop equipment in automorepairing, auto electrics and carburetion, auto body and paint reconditioning, ing, acetylene and electric welding, and can accommodate approximately students.

The Bachelor of Science Degree may be taken in Automotive Technology, Body Reconditioning or Welding Technology. A major in these fields pares a student as an automotive technician or as a welding technician who better interpret the designs of the engineer and direct the work of the reman. This major also prepares a student for work as a shop foreman, shop rintendent or as a trade instructor. Students wishing to better prepare selves for graduate study at other institutions in automotive, aeronautical, l, welding, or closely allied fields of engineering, may do so by substitutertain prescribed courses during their junior and senior years.

The curriculum for the Bachelor Science Degree in Automotive Technology ws:

CURRICULUM IN AUTOMOTIVE TECHNOLOGY

Degree: Bachelor of Science in Automotive Technology.

Freshman Year

Course	Credit F	Credit W	Credit S
Auto 1, 2, 3	5	5	5
Auto 1a, 2a, 3a	5	5	5
Math. 34, 35, 46	3	5	5
M. W. 91, 92, 93	2	2	2
Auto 81a	2	—	—
M. S. 1, 2, 3	1	1	1
Orientation	0	—	—
	18	18	18

Sophomore Year

Course	Credit F	Credit W	Credit S
Auto 4, 5, 6	5	5	5
Auto 4a, 5a, 6a	5	5	5
Eng. 17, 18, 19	3	3	3
Econ. 51	—	5	—
M. W. 51	—	—	5
Auto 91	3	—	—
M. S. 4, 5, 6	1	1	1
Electives	2	—	—
	19	19	19

Junior Year

Course	Credit F	Credit W	Credit S
Physics 20, 21, 22	5	5	5
Math. 97, 98	5	5	—
A. E. 116	—	—	5
Auto 191, 192	—	3	3
Eng. 110	4	—	—
Physio. 108	—	5	—
Chemistry 10	—	—	5
Electives	3	—	—
	17	18	18

For major in Auto Body Reconditioning, substitute Auto 11 to 16 for Auto 1 to 6. Substitute Auto 11a to 16a for Auto 1a to 6a.

Senior Year

Course	Credit F	Credit W	Credit S
Auto 151, 152, 153	3	3	3
Auto 61, 62, 162	3	3	3
Physics 175, 176, 177	3	3	3
C. E. 100	2	—	—
C. E. 197, 196	3	3	—
Econ. 125	—	3	—
I. A. 113	—	—	3
Electives	3	2	5
	17	17	17

For major in Welding Technology, substitute Auto 41 to 46 for Auto 1 to 6. Substitute Auto 41a to 46a for Auto 1a to 6a.

DESCRIPTION OF COURSES

The following courses listed (Technical, Shop and Related) offer respectively the technical instruction, shop practice and closely related information for the particular trade. Trade Math., M. W. 6, 7, 8; Trade Problems; Auto 48, 49, 50, or Trade English; Eng. 17, 18, 19, and Trade Drawing; M. W. 91, 92, 93, are offered as the related courses for the two year trade certificate.

Auto 1, 1a. Steering Correction. (Technical, Shop and Related.) Training in the construction, operation, and repair of the parts of the automobile chassis. The units covered are front axles, wheels, control linkage, individual wheel suspension, steering gears, front and rear wheel alignment, frame straightening, and brakes. Modern methods of repair. Fall quarter. Technical, five credits, Daily 9; Shop, five credits, Daily 10-1; Related, five credits. *France*

Auto 2, 2a. Automotive Engines. (Technical, Shop and Related.) Training in the construction, operation, and repair of the modern automobile engine. The units of this course include cylinder blocks, piston assemblies, crankshaft assemblies, valve assemblies, cooling and lubricating systems. Modern methods of repair. Winter quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *France*

Auto 3, 3a. Driving Mechanisms. (Technical, Shop and Related.) Training in the construction, operation and repair of clutches, transmission, overdrives, universals, drive shafts, differentials, and rear axles. Modern methods of repair. Spring quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *France*

Auto 4, 4a. Fuel Systems. (Technical, Shop and Related.) Training in the construction, operation and repair of gasoline tanks, fuel systems, carburetors, manifolds, controls, and special devices including superchargers, governors and auto diesel engine fuel systems. Modern methods of repair. Fall quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *France*

Auto 5, 5a. Auto Electrics. (Technical, Shop and Related.) Training in the construction, operation, and repair of the electric systems used on the modern automobile. The units in this course include the battery, lighting systems, ignition systems, starting and generating systems. Modern methods of repair. Winter quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *France*

Auto 6, 6a. Motor Tune-up. (Technical, Shop and Related.) This work correlates the work covered on engines, carburetion and electrics. Tests for troubles will be made with modern tune-up equipment and these troubles remedied by trade accepted methods. Spring quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *France*

Auto 11, 11a. Chassis Alignment. (Technical, Shop and Related.) Training in the aligning of chassis frames, front and rear axles, wheels, and steering correction. Latest methods in the checking and correcting of damaged automobiles and methods of preparing them for safe and economical driving. Fall quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 12, 12a. Fender Reconditioning. (Technical, Shop and Related.) Training in the roughing out, shrinking, leading, buffing, sanding and metal finishing of fenders. Fundamental principles and practice in oxy-acetylene welding which prepares the student to do the light welding necessary in auto body repairing. Winter quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 13, 13a. Body Reconditioning. (Technical, Shop and Related.) Training in the major auto body repairs including the checking and alignment of the automobile body. Repair and replacement of damaged body panels such as the dash, cowl, trunk, rocker, floor, side, top and door panels. Spring quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 14, 14a. Body Mechanism. (Technical, Shop and Related.) Training in the repair and replacement of all the mechanism of the automobile body. This will include such units as glass and door ventilator regulators, cowl ventilator regulators, door and seat adjustment, and windshield wiper mechanism. Attention will be given to the cutting, grinding, and replacing of auto body glass. Fall quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 15, 15a. Automotive Trimming. (Technical, Shop and Related.) Training in the repair and replacement of all auto body trim, including such units door and rear quarter trim, head lining, floor covering, cowl pads, seat and back cushions, windlace and accessories. Winter quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 16, 16a. Automotive Refinishing. (Technical, Shop and Related.) Training in the preparation of body metal and the application of lacquer and synthetic enamels. Units covered will include metal preparation, priming, surfacing and the application of color. Also practice in spotting, striping, and graining will be offered. Spring quarter. Technical, five credits. Daily Shop, five credits. Daily 10-1; Related, five credits. *Staff*

Auto 41, 41a. Acetylene Steel Welding. (Technical, Shop and Related.) Training in fusion welding and cutting of mild steel by means of oxy-acetylene welding equipment. Various techniques and welding positions are studied and practiced, and the A. S. M. E. standard tensile test is made on samples welded

in flat position. Included in this course is a careful study of the equipment and safety factors involved. Fall quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 42, 42a. Acetylene Cast-Iron Welding. (Technical, Shop and Related.) Training in fusion welding, bronze welding, and cutting of cast iron and malleable castings with oxy-acetylene welding equipment. Special problems in the preheating of castings are introduced. Also some attention is given to welding of heavy steel. A. S. M. E. standard tensile tests are made on steel specimens welded in the horizontal position. Winter. quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 43, 43a. Acetylene Aluminum Welding. (Technical, Shop and Related.) Training in the welding of aluminum, duraluminum, chrome-molybdenum, inconnel, stainless steel, miscellaneous alloys and non-ferrous metals with the oxy-acetylene welding equipment. Some attention is also given to pipe welding, hard surfacing and flame hardening. A. S. M. E. standard tensile tests are made on steel specimens welded in the vertical and overhead position. Spring quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 44, 44a. Electric Steel Welding. (Technical, Shop and Related.) Training in fusion welding of mild steel by means of electric-arc welding equipment. Various techniques and welding positions are studied and practiced, and the A. S. M. E. standard tensile test is made on samples welded in flat position. Included in this course is a careful study of the equipment, and safety factors involved. Fall quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 45, 45a. Electric Cast-Iron Welding. (Technical, Shop and Related.) Training in fusion welding, bronze welding and cutting of cast iron and malleable castings with electric-arc welding equipment. Special problems in preheating of castings and welding of heavy steel. A. S. M. E. standard tensile tests are made on steel specimens welded in the horizontal position. Winter quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 46, 46a. Electric Aluminum Welding. (Technical, Shop and Related.) Training in the welding of aluminum, duraluminum, chrome-molybdenum, inconnel, stainless steel, miscellaneous alloys and non-ferrous metals with the electric-arc welding equipment. Some attention is also given pipe welding and hard surfacing. A. S. M. E. standard tensile tests are made on steel specimens welded in the vertical and overhead positions. Spring quarter. Technical, five credits. Daily 9; Shop, five credits. Daily 10-1; Related, five credits. *Kemp*

Auto 48, 49, 50. Trade Problems. Trade orientation, labor problems and human relations affecting trade training students and apprentices. Two credits each quarter. Fall, Winter, and Spring, T. Th. 8. *Jeppsen*

Auto 51. Automobile Chassis. Principles and practice in the types, construction, operation and servicing of the modern automobile chassis. The units of the course include rear axles, individual wheel suspension, steering gears, frames, springs, universals, drive shafts and brakes. Open to any college student. Three credits. Fall, Lecture, T. Th. 2; Lab., T. Th. 3-5. *Jeppsen*

Auto 52. Automobile Power Plants. Principles and practice in the types, construction, operation, and servicing of the modern automobile power plant. The units of the course include cylinder block assemblies, piston assemblies, crankshaft assemblies, valve assemblies, clutches, transmissions, overdrives, cooling and lubricating systems. Open to any college student. Three credits. Winter, Lecture, T. Th. 2; Lab., T. Th. 3-5. *Jeppsen*

Auto 53. Automobile Electricity. (Prerequisite, Auto 52.) Principles and practice in the types, construction, operation, and servicing of the electrical systems used on the modern automobile. The units to be covered include start-

g, generating, lighting, ignition, and special accessory systems. Three edits. Spring, Lecture, T. Th. 2; Lab., T. Th. 3-5. *Jeppsen*

Auto 61. Body and Fender Repair. Principles and practice in the fundaentals of fender and body repairing, including work in metal finishing, light elding, door and body alignment. Open to any college student. Three credS. Fall, Lecture, T. Th. 2; Lab., T. Th. 3-5. *Staff*

Auto 62. Upholstering. Principles and practice in the repair of modern pholstery. Rebuilding and recovering of automobile upholstery and home rniture. A practical course in upholstery repair. Open to any college student. hree credits. Winter, Lecture, T. Th. 2; Lab., T. Th. 3-5. *Staff*

Auto 81, 82, 83. Forge Practice. Training in the fundamental operations f forging such as shaping, bending, drilling, hardening, tempering, and forge elding. This course will prepare the student to do successfully the forging bs in repair shops, construction camps, and industrial maintenance shops. his training is necessary for all acetylene and electric welders and other etal workers entering present-day defense industries. Open to all students agriculture, engineering, industrial arts, and trades and industries. Five edits each course. Part of these courses may be taken any one quarter: 81a, rst two, or 81b, first three credits; and 81c, last three, or 81d, last two credS of the course. Fall, Winter, and Spring. Daily 2-5. *Egbert*

Auto 84. Ornamental Iron Work. Designing and making of iron furnishgs, fences, gates, grilles, jardinieres, sign brackets, etc. Prerequisites, Art and 37 and Auto 81b. Two credits. Spring, T. Th. F. 11-1. *Egbert*

Auto 91. Acetylene Welding. Principles and practice in the fundamentals oxy-acetylene welding and cutting. A general course open to any college udent. Three credits. Fall, Winter or Spring. Lecture, T. Th. 2; Lab., T. h. 3-5. *Kemp*

Auto 92. Aero Welding. (Prerequisite, Auto 91.) Principles and practice welding steel and alloy steel tubing as practiced in aircraft construction d repair. Three credits. Winter. Lecture, T. Th. 2; Lab., T. Th. 3-5. *Kemp*

Auto 93. Advanced Aero Welding. (Prerequisite, Auto 92.) Principles and actice in welding aluminum, duraluminum, chrome-molybdenum, inconnel, ainless steel, and other alloys used in the manufacture and repair of airaft. Three credits. Spring. Lecture, T. Th. 2; Lab., T. Th. 3-5. *Kemp*

Auto 151. Carburetion. (Prerequisite, Auto 4 or its equivalent.) Advanced hnical training in fuels and carburetion as applied to the modern automoe. Units covered will include fuel pumps, carburetors, manifolds, controls d principles of combustion, compression and exhaust gas analysis. Three edits. Fall. Lecture, M. W. 2; Lab., M. W. 3-5. *France*

Auto 152. Motors and Generators. (Prerequisite, Auto 5 or its equivalent.) vanced technical training in the principles, construction, operation and reir of the automobile starting motor, generator, and their controlling devices. ree credits. Winter, Lecture, M .W. 2; Lab., M. W. 3-5. *France*

Auto 153. Magnetos. (Prerequisite, Auto 5 or its equivalent.) Advanced hnical training in the principles, construction, operation, and repair of low d high tension magnetos and their accessories. Three credits. Spring. ture, M. W. 2; Lab., M. W. 3-5. *France*

Auto 162. Metal Refinishing. Principles and practice in the shaping and paring of metal for refinishing. Fundamental procedures in the priming, facing, and application of lacquer and enamel. Three credits. Spring. ture, T. Th. 2; Lab., T. Th. 3-5. *Staff*

Auto 191. Electric Welding. (Prerequisite, Auto 91.) Principles and prac in the use of the latest types of electric-arc welding equipment. Safety asures and methods used in arc-welding of steels, cast iron, and non-ferrous

metals. Instruction in oxy-acetylene welding of cast iron and torch cutting of steel will be offered. Three credits. Winter. Lecture, M. W. 2; Lab., M. W. 3-5. *Kemp*

Auto 192. Resistance Welding. (Prerequisite, Auto 191.) Principles and practice in the welding of iron, steel and non-ferrous metals by means of spot welding and other types of resistance welding equipment. Some attention will be placed on the welding of bronze, aluminum and non-ferrous metals and hard surfacing with acetylene and electric equipment. Three credits. Spring. Lecture, M. W. 2; Lab., M. W. 3-5. *Kemp*

Metalwork and Mechanical Drawing

AARON NEWEY, *Associate Professor;* FREDERICK PREATOR, *Assistant Professor.*

This department offers work in mechanical drawing, machine shop practice, sheet metal work, ornamental metal work, and metals and heat treatment. It also provides the necessary course for Bachelor of Science Degree in Trades and Industries with a major in Metalwork, a terminal short course in the machine shop trade, and service courses that may be used toward satisfying the teacher training curriculum in Industrial Arts. Also, the service courses in Shop Drawing are provided for the Industrial Division.

The degree course in Metalwork offers to young men with special aptitudes in mechanical work, drafting, and mathematics, an excellent opportunity to train for machine-work and tool-making, and in addition, it lays a foundation for entering such allied fields as machine designers, master mechanics, trade teachers, and airplane mechanics or designers and several branches of engineering.

The shop courses in the department give good training for students who are studying for a career where mechanical work is needed. Students preparing for engineering, electrical work, auto mechanics, aviation, ignition, tractor work, farm machinery, and those interested in model building and experimenting will find these courses suited to their needs.

The department has a floor space of 5,080 ft. The machine shop is equipped with the following machine tools: 12 lathes, 2 milling machines, 2 shapers, 1 planer, 2 universal cutter grinders, 1 surface grinder, 1 power hacksaw, 4 drill presses, 4 tool grinders and 1 Doall machine.

The shops are well supplied with machinist hand tools such as vises, bench tools, reamers, gauges, twist drills, taps, dies, micrometers, and other measuring tools and also facilities and tools to handle ornamental metalwork, and sheet metalwork.

CURRICULUM IN METALWORK

Degree: Bachelor of Science in Metals.

Freshman Year

Course	Credits F	Credits W	Credits S
Eng. 17, 18, 19	3	3	3
M.W. 51, 52, 53b	5	5	3
Math. 34, 35, 46	3	5	5
M.W. 91, 92, 93	2	2	2
M.W. 31a	—	—	2
M.W. 50	—	—	3
Electives	4	2	—
	17	17	18

Sophomore Year

Course	Credits F	Credits W	Credits S
Math. 97, 98, 99	5	5	5
Chem. 10, 11	5	5	—
Physio. 4	5	—	—
M.W. 53c	3	—	—
Speech 5	—	3	—
M.W. 151b, 151c	—	3	3
Econ. 51	—	—	5
C.E. 63	—	—	3
Electives	—	2	—
	18	18	16

Junior Year

Course	Credits F	Credits W	Credits S
Physics 20, 21, 22	5	5	5
C.E. 190	3	—	—
M.W. 152b, 152c	3	—	3
B.A. 55	—	5	—
P.S. 12, 13	—	3	3
W.W. 61b, 61c	—	3	3
Electives	6	2	3
	17	18	17

Senior Year

Course	Credits F	Credits W	Credits S
M.W. 95	3	—	—
W.W. 160b	3	—	—
M.W. 153b	3	—	—
C.E. 197	—	3	—
M.W. 181, 182	—	5	5
C.E. 101, 102, 103	5	5	5
Physio. 108	—	—	5
Electives	3	3	3
	17	16	18

DESCRIPTION OF COURSES

All courses in Metalwork are open to vocational students.

Any five credit course in Machine work may be completed by taking part of the course during one quarter and the other part during a later quarter. The letters A, B, C, D attached to any five-credit course number indicates, respectively, two credits, three credits, three credits, and two credits. A and B indicate the first part of the course and C and D the latter part. For an example: 51a, 2 credits; 51b, 3 credits; 51c, 3 credits; 51d, 2 credits.

MW 40. Sheet Metal. This course gives practice in the fundamental operations and tool processes of sheet metal work. Articles are made from black iron, galvanized iron, and bright tin that give practice in pattern developing, cutting, soldering, seaming, riveting, wiring, etc. The training needed for teaching sheet metal work in high schools will receive due consideration during the course. Two credits. Spring, M. W. F. 10-12. *Preator*

MW 41. Art Metalwork. This course consists of laboratory work in casting, embossing, sinking, engraving, etching and metal spinning operations. The work is done in copper, brass, pewter, and aluminum on projects designed for utility and artistic merit. Prerequisites, Art 4 or 37, Machine Work 51b. Senior college students may register for MW 141. Two credits. Spring, M. W. F. 10-12. *Preator*

MW 42. Plastics Laboratory. An informational and laboratory course having as its purpose the use and development of projects in the plastic materials. The tooling operations suited to the new materials are incorporated in the projects made. Two credits. Spring, T. Th. 8-11. *Preator*

MW 50. Metals and Heat Treatment. The course is a study of the physical properties, composition, constituents, and heat treatment of metals used in industry. The metals and heat treatment studies will include cast iron, wrought iron, plain carbon steel, alloy steels, brasses, bronzes, aluminum alloys and magnesium alloys. Three credits. Any quarter. Time arranged. *Newey*

MW 51, 52, 53. Machine Practice. These courses give training in the use of hand tools and in bench work, together with elementary training on the drill press, lathe, shaper, planer, and milling machine. Tools and machine parts are made that give practice in the operations that are essential in machine shop work. Included are assignments of reading on machine work subjects, and the application of mathematics to machine work. Five credits each course. Fall, Winter, and Spring, Daily 10-1 and 2-5. *Newey*

MW 151, 152, 153. General Machine Work. Advanced lathe, planer and milling machine work, grinding milling cutters, making general shop tools, and special shop equipment. Prerequisites, MW 51, 52, 53. Five credits each course. Fall, Winter, and Spring. Daily 2-5. *Newey and Preator*

MW 181, 182, 183. Tool and Die Making. Introducing tool making as a factor in modern production methods. The making of taps, reamers, cutters, and precision gauges for interchangeability of parts. Milling machine work on plain

and spiral gears and the design and making of worm and worm wheel. Surface grinding and an introduction to press cutting and forming operations which is a foremost method of modern production. Prerequisites, MW 51, 52, 53. Five credits each course, Fall, Winter, and Spring. Daily 2-5. *Preator*

MECHANICAL DRAWING

The drafting laboratory, with a floor space of 1,600 square feet, is well lighted and equipped to handle a class of 40 students at individual drafting tables. Modern equipment such as Universal drafting machines, the different printing machines, and printing processes are made available to the students.

MW 91, 92, 93. Shop Drawing. The use of instruments and types of lettering on template drawings and graphic solutions, standard elements and symbols which make up mechanical drawings used in industry. The theory of shape and its representation in orthographic projections, sections, auxiliary views, revolutions, and size description. Isometric drawings and the translation of orthographic into pictorial drawings. Two credits each course. MW 91, Fall, T. Th. 11-1 or 2-5, Winter, M.W.F. 11-1; MW 92, Winter, T. Th. 11-1 or 2-5, Spring, M. W. F. 11-1; MW 93, Spring, T. Th. 11-1 or 2-5. *Preator*

MW 94. Working Drawings and Specifications. Completion of assembly drawings, detailed working drawings, scale drawings of building plans, and details showing parts of construction. Tracing and blueprinting. Three credits. Winter, M. W. F. 11-1.

Preator

MW 95. Machine Drafting. Problems pertaining to machinery drives and fastenings, mechanisms of power and motion, and the design of machine parts incorporating standardized methods consistent with industry. Three credits. Fall, M. W. F. 11-1. *Preator*

MW 96. Aeronautical and Machine Drawing. Problems with wiring diagrams, templates, surface development, machinery drives, and mechanisms of power and motion. Special emphasis on symbols, techniques and the standards consistent with the aviation industry. Prerequisites, MW 91, 92, and 93. Two credits. Fall, M. W. F. 10-12. *Preator*

Radio

*S. R. STOCK, *Associate Professor;* LARRY S. COLE, *Assistant Professor;*
*CLAYTON CLARK, EDWARD W. PAYNE, *Instructors.*

The objective of the Department of Radio is to provide a thorough fundamental and technical education in the various phases of radio technology. The unusual expansion of the radio industry in the past decade has created an urgent need for large numbers of well trained, experienced technicians, operators, and maintenance men, and the facilities and programs of the department have been designed to adequately train men to meet these needs.

The Department of Radio maintains extensive contacts with industrial and governmental agencies that employ technically trained radio men and employment assistance is given to students who have completed various phases of training. Students who have taken training in radio during the past several years have enjoyed almost 100 per cent placement in their field.

The Radio Department has extensive laboratory space, modern equipment and a well trained staff. Among the equipment available are: radio transmitters from 25 to 1000 watts, both commercial and composite types; a large number of commercial communications receivers; a completely equipped broadcasting studio with all monitoring and recording equipment; a comprehensive

*On leave.

stock of radio testing and measuring equipment including oscilloscopes, analyzers, chanalysts, tube testers and meters of all types, and an unusually fine stock of radio parts and tubes for instruction and experimental purposes.

There are two college programs in the Department of Radio. First, a standard four year college course leading to a degree of Bachelor of Science in Radio Technology and second, terminal trade and industrial courses in radio service and repair. In addition, to the regular college work the department is providing radio training for civilian employees in the Signal Corps of the United States Army, Mechanic Learners for Hill Field Air Base, and for 300 enlisted men from the United States Navy.

CURRICULUM IN RADIO

Degree: Bachelor of Science in Radio Technology

Freshman

Course	Credits F	W	S
Eng. 17, 18, 19	3	3	3
Math. 34, 35, 46	3	5	5
Radio 31, 32, 33	1	1	1
Physiology 4	—	5	—
Radio 23	5	—	—
Radio 24	—	5	—
Radio 89	—	—	5
M. W. 51b	—	—	3
M. W. 91	2	—	—
M. S. 1, 2, 3	1	1	1
	16	20	18

Sophomore

Course	Credits F	W	S
Econ. 51	5	—	—
Physics 20, 21, 22	5	5	5
Geology 1	—	5	—
Radio 80	3	—	—
Radio 84	—	5	—
Radio 85	—	—	5
M. S. 4, 5, 6	1	1	1
Electives	2	—	6
	16	16	17

Junior

Course	Credits F	W	S
Math. 97, 98, 99	5	5	5
Radio 124	4	—	—
Chem. 10, 11	5	5	—
Radio 125	—	4	—
Radio 88	—	—	2
Radio 126	—	—	4
Speech 81	—	—	3
Electives	3	3	3
	17	17	17

Senior

Course	Credits F	W	S
Radio 120	4	—	—
Radio 128	—	4	—
Radio 129	—	—	4
Physics 120, 121	3	3	—
Accounting 100	—	3	—
Eng. 111	—	—	4
CE 197	3	—	—
Electives	5	7	9
	17	17	17

DESCRIPTION OF COURSES

The following courses listed (Technical, shop and related.) offer respectively the technical instruction, shop practice and closely related information for the particular trade. The related information may include Trade Math. MW 6, 7, 8 and Trade Problems, Auto 48, 49, 50, or Trade English, Eng. 17, 18, 19, and Trade Drawing, MW 91, 92, and 93.

Radio 1, 1a, 1b. Audio and Radio Frequency Circuits. (Technical, Shop and Related.) Training covering radio electricity, detector and amplifier circuits; construction and repair of simple types of radio receivers; use and care of radio tools and testing instruments. Five credits. Fall. Technical. Daily, and Shop, seven credits. Daily 11-12 and 2-5. Related, 5 credits, Daily 9.

Staff

Radio 2, 2a, 2b. Radio Receivers. (Technical, Shop, and Related.) Training covering alternating currents, power supplies, filter circuits; repair and

adjustment of home type TRF and superheterodyne receivers; use of advanced type testing equipment. Winter. Technical, five credits. Daily, 10. Shop, seven credits. Daily 11-12 and 2-5. Related, five credits. Daily, 9. *Staff*

Radio 3, 3a, 3b. All Wave and Auto Receivers. (Technical, Shop and Related.) Training covering service and repairs of all wave, portable, battery and auto radio receivers; sound system, phonograph and recorder adjustment and repair; technique of diagnosis and radio measurements. Spring. Technical, five credits. Daily, 10. Shop, seven credits. Daily, 11-12 and 2-5. Related, five credits. Daily, 9. *Staff*

Radio 10, 10a, 10b. Auto Radio Receivers. (Technical, Shop and Related.) Training covering construction, installation and servicing of auto, portable and aircraft types of radio receivers; noise elimination and static problems in these types of sets. Fall. Technical, five credits. Daily, 10. Shop, seven credits. Daily, Lab., 11-12 and 2-5. Related, five credits. Daily, 8. *Staff*

Radio 11, 11a, 11b. Sound Systems. (Technical, Shop and Related.) Training covering the design, construction, operation, installation and servicing of public address, recording and inter-communication systems; phonograph pick-ups, microphones and cutting-heads. Winter. Technical, five credits. Daily, 10; Shop, seven credits. Daily, Lab., 11-12 and 2-5; Related, five credits. Daily, 8. *Staff*

Radio 12, 12a, 12b. High Fidelity and All Wave Receivers. (Technical, Shop and Related.) Training covering construction, adjustment and service of modern home receivers of these types; use of cathode ray oscilloscope and other more complete types of radio testing equipment; study of other present day and pending radio developments. Spring. Technical, 5 credits, Daily, 10. Shop, 7 credits. Daily, Lab., 11-12 and 2-5. Related, five credits. Daily, 8. *Staff*

Radio 23. Radio Electricity. A general introductory course covering fundametals of electricity; radio reception and transmission; principles of vacuum tube detectors and amplifiers and circuit constants. Laboratory work covers soldering, wiring, use of diagrams and construction of several types of simple radio receivers. Five credits. Fall. Lecture, M. W. F. 11, Lab., Sec. 1, T. Th. 2-5; Sec. 2, M. W. 2-5. *Payne*

Radio 24. Radio Receiver Systems. A continuation of Radio 23, including further study of vacuum tubes; audio and radio frequency amplifiers; alternating currents and resonant circuits; superheterodyne receivers and power supplies. Lab. work includes construction of superheterodyne receivers; amplifiers and power supplies. Five credits. Winter. Lecture, M. W. F. 11. Lab., T. Th. 2-5. *Payne*

Radio 31, 32, 33. International Code Practice. These three courses will train the beginner to send and receive correctly 15 to 20 words per minute. The actual speed attained will depend on individual ability. Required of all students majoring in radio and those taking C.A.A. training. One credit each quarter. Fall, Winter, and Spring, M. W. 12. *Staff*

Radio 80. Circuit Analysis. A study of series and parallel direct and alternating current circuits; resonance and simple networks; application of principles for measurement, circuit adjustments, and diagnosis purposes. Three credits. Fall, M. W. F. 10. *Cole*

Radio 84. Instruments and Measurements. A study of the principles, construction and use of modern radio testing and measuring equipment; systematic methods of diagnosis and circuit testing. Laboratory work includes practice in use of instruments and diagnosis and repair of radio receivers. Prerequisite, Radio 25. Five credits. Winter. Lectures, M. W. F. 10; Lab., T. Th. 2-5. *Cole*

Radio 85. Advanced Radio Service. A course in radio maintenance. It covers the testing, diagnosis, adjustment, and repair of all types of modern receivers, including specialized systems involving automatic volume and frequency control,

crystal filters, noise limiters and frequency modulation. Ample laboratory practice in testing, adjustment and repair is given. Prerequisite, Radio 84. Five credits. Spring. Lecture, M. W. F. 10; Lab., T. Th. 2-5. *Cole*

Radio 88. Forest Service Radiophone and Telephone. This course is designed especially for students in the schools of Forestry and Radio. Proper methods of operation, installation, station procedure, and communication practice will be given. The laboratory work will be done in the field, using standard Forest Service Radio and Telephone equipment. The court will also include telephone operation, line construction, and methods of location and repairing common phone troubles. The Forest Service office at Ogden is furnishing the necessary telephone and radio equipment for the course. The Forest Service officials will conduct the final field tests. Two credits. Spring, T. Th. 2-5. *Payne*

Radio 89. Short Wave Receivers and Transmitters. An introductory course covering the principles of short wave receivers and transmitters for communication and broadcast service. Students will construct their own short wave receivers and transmitters and study principles of short wave radio transmitters with methods of tuning, neutralization and adjustment. To those interested, this course is adequate preparation for the government examination for amateur license. Five credits. Spring, M. W. F. 11; T. Th. 8-10; T. 10-12. *Payne*

Radio 101. Practical Electricity. Required of all students who are preparing to teach Industrial Arts in high schools. This course will include a study of the fundamental principles of electricity and their application in the construction of such projects as bell circuits, house wiring, electro-magnets, heating elements, motors, electric soldering irons, transformers, and other common electrical devices. Four credits. Spring. Three Lecture-labs. per week. Time arranged. *Payne*

Radio 120. Antennas. Fundamentals of radio antennas, radiation and wave propaganda; adjustment and construction of all types of Marconi and Hertzian antennas; directional arrays; feeder lines and matching networks; antenna and field strength measurements. Four credits. Fall, M. W. F. 11; Lab., W. 2-5. *Cole*

Radio 124. Vacuum Tube Theory and Application. A study of the principles, characteristics and operation of electronic vacuum tubes in modern radio and associated equipment. Laboratory work covers the measurements, adjustments and effects in vacuum tube circuits. Required of all students majoring in Radio. Four credits. Fall, M. W. F. 9; M. 2-5. *Cole*

Radio 125. Audio Frequency Amplification. A course covering the principles characteristics, adjustments and construction of resistance, impedance and transformer coupled audio amplifiers; audio circuit constants and measurements; Class A AB and B power amplifiers. Prerequisite, Radio 124. Four credits. Winter, M. W. F. 9; W. 2-5. *Cole*

Radio 126. Radio Frequency Amplification. Principles, characteristics, and construction of R. F. voltage and power amplifiers; neutralization and adjustment; modulation; introduction to ultra high frequency amplifiers and frequency modulation; R. F. circuit constant. Prerequisites, Radio 80, Radio 124. Four credits. Spring, M. W. F. 8; M. 2-5. *Cole*

Radio 128. Broadcast and Commercial Transmitters. The features, characteristics, operation and adjustment of modern commercial communications equipment used in broadcast, marine, aeronautical and public service fields. Material covered constitutes ample preparation for commercial radio operator license examination. Prerequisites, Radio 124; Radio 126. Four credits. Winter, M. W. F. 11; M. 2-5. *Cole*

Radio 129. Sound, Recording and Studio Technique. Course covers principles of acoustics; microphone and speaker characteristics; theater and outdoor sound systems; instantaneous and wax recording; motion picture recording and

reproduction; specialized audio amplifiers. Laboratory work consist of actual recording and studio arrangements, sound system installations and acoustic measurements. Prerequisites, Radio 124, Radio 125. Four credits. Spring, M. W. F. 11; W. 2-5. *Cole*

Woodwork and Building Construction

D. A. SWENSON, JOSEPH COULAM, *Assistant Professors.*

The Woodwork Department occupies the center and south wing of the second floor of the Mechanic Arts Building, containing 5,418 square feet of floor space. In this space is housed machine room, bench room, stock room, finishing room, classroom and office.

The shops are completely equipped with woodworking machines, well lighted, and can accommodate, at one time, approximately thirty-five students.

This department offers work in joinery and millwork, building construction, estimating and contracting, pattern making, wood turning, wood finishing, house decorating, and cabinet work. It provides the necessary courses for the Bachelor of Science degree in Woodwork and Building Construction; it provides for a two-year terminal short course in Carpentry and Building Construction and service courses that may be used toward satisfying the curriculum in Industrial Arts.

CURRICULUM IN WOODWORK AND BUILDING CONSTRUCTION

Degree: Bachelor of Science in Woodwork and Building Construction.

Freshman Year

Course	Credits F	W	S
Eng. 17, 18, 19	3	3	3
Bact. 1	4	—	—
Bact. 2	1	—	—
M. W. 91, 92, 93	2	2	2
W. W. 6, 7, 8	3	3	3
W. W. 61, 62, 63	5	5	5
Physio. 50	—	3	—
W. W. 72	—	2	—
Speech 5	—	—	3
Electives	—	—	2
	18	18	18

Sophomore Year

Course	Credits F	W	S
Chem. 10	5	—	—
M. W. 94	3	—	—
Econ. 51	5	—	—
W. W. 64, 65, 66	5	5	5
Math. 35, 46	—	5	5
P. S. 12	—	—	3
Art 3	—	3	—
W. W. 60	—	2	—
W. W. 73	—	—	3
W. W. 68	—	3	—
Electives	—	—	2
	18	18	18

Junior Year

Course	Credits F	W	S
For. 126	—	4	—
Eng. 110	—	—	4
Physics 20, 22	5	5	—
W. W. 171, 172a	5	2	—
Zoo. 111	—	4	—
W. W. 170	—	—	3
Physio. 108	—	—	5
C. E. 112	3	—	—
Electives	2	3	6
C. E. 81	3	—	—
	18	18	18

Senior Year

Course	Credits F	W	S
W. W. 174	2	—	—
Geo. 3	5	—	—
B. A. 100	—	3	—
Math. 97	5	—	—
W. W. 161, 162, 163	5	5	5
Econ. 125	—	3	—
Hist. 17	—	—	5
Electives	1	7	8
	18	18	18

Courses WW 61, 62, 63 and WW 171, 172, 173 may be completed by taking part of the course during one quarter and the other part during a later quarter. The letters A, B, C, D are used to designate the subdivisions of these courses. Thus, A represents the first two credits of the course; B represents the first three credits; C, the last three credits and D, the last two credits. The three-hour courses are offered 9-12 M. W. F. each quarter, and the two-hour courses are offered 9-12 T. Th. each quarter.

WW 6, 7, 8. Shop Problems. This course deals with shop arithmetic, placing emphasis upon the use of fractions, decimals, the metric system, percentage, ratio and proportion, showing their application in the solution of shop problems. Applied Geometry problems developed for the shop students. Areas, volumes, speed relations, cutting speeds, thread and gear calculations, flooring, roofing, board measure, the use of the steel square, estimating and cost of materials, all find application. Three credits. Each quarter. Sec. 1 M. W. F. 9; Sec. 2 M. W. F. 1. *Coulam*

WW 60. Elements of Plumbing. This course includes plumbing specifications, codes, layouts, installations, inspections, cutting and fitting pipe, and repairs. Two credits. Winter, Lect., T. Th. 9; Lab., Th. 10. *Egbert*

WW 61, 62, 63. Joinery and Millwork. These courses give the necessary basic training for students preparing to enter various fields of the woodworking trades, and also for students who wish a knowledge of woodwork for their own needs. They include a thorough study in the proper use, care and sharpening of hand tools, machine processes, safety measures, machine operation, care and repair of machines, and sharpening of machine cutters. Assigned reading and application of mathematics to woodwork problems are integral parts of the course. Problems are also assigned in the form of projects in bench work and wood turning to give practice in the fundamentals of wood construction. Five credits. Each quarter. Daily 2-5. *Swenson and Coulam*

WW 64, 65, 66. Building Construction. A study of laying out and building homes, farm buildings, garages, etc., particularly placing stress on carpenter work. Subjects include concrete forming, framing, roof framing, roofing, scaffolding, siding, exterior and interior trim, window and door work. Special attention is given to trade construction methods. Prerequisites, WW 61, 62, and 63. Five credits. Each quarter. Daily 2-5. *Coulam*

WW 68. House Wiring. This course is designed to meet the needs of students in building construction courses. Work covers the national electrical code and, where available, the local codes in effect in Utah communities. Training in this course prepares the student to choose materials, design the circuit, and properly install a complete system for electrical heat, light, and power in a home or small public building. Three credits. Winter, T. Th. 8. 3 hour lab. arranged. *Staff*

WW 72. Concrete and Clay Products. A study is made of the composition of concrete for various purposes, the use and placement of reinforcing agents; waterproofing, coloring, and stone imitations, etc. Composition of bricks, tile, etc., and their strength and thermal conductivity also studied. A number of projects built in the laboratory during the course. Two credits. Winter, Lect., T. 8; Lab., Th. 8-10. Extra lab. section to be arranged. *Coulam*

WW 73. Materials of Industry. A study is made of wood and wood products, commercial veneered panels, roof coverings, wall boards, insulations, siding, composition panelings, glass products and other non-metal materials used in the building trades. Three credits. Spring, M. W. F. 12. *Coulam*

WW 160, 160b. Pattern Making. Making of simple patterns to illustrate suitable materials for the work, care and precision necessary in pattern work, also construction of patterns for use in the foundry, teaching the principles WW 160b, three credits. Winter, M. W. F. 9-12. *Swenson*

WW 161, 162, 163. Building Construction. Estimating and Contracting. A course in construction and design for homes, farm buildings and apartments, considering porch work, stairways, dormers, special roofs, insulation and other special constructions, specification writing, cost estimating, contracting methods, and drawing of special sections and details. Also a study of allowable loads. Problems in actual bidding on sets of plans are worked out by the student. (Continuous.) Prerequisites, 9 hours Drafting and WW 61, 62, 63. Five credits each quarter*. Where the laboratory requirements have already been met, only three hours will be given for the lecture in 161. Fall, Lect. M. W. F. 11. Winter and Spring Lect., M. W. F. 3; Lab., T. Th. 2-5. *Coulam*

WW 170. Wood Finishing and House Decorating. This course considers fine wood finishing such as natural finishes, French polishing, hand polishes, stains, paints, enamels, gun work, interior and exterior wood finishes, plaster paints, brick stains, stucco paints, etc. Wall papers and calcimines are also considered. The student will be required to do practice work in each type of finishing. Three credits. Spring, T. Th. 8; Lab., Th. 9-12 or 10-1. *Swenson*

WW 171, 172, 173. Cabinet work. The work done in these courses consists of a study in the design and construction of furniture and cabinets. It includes a study of the woods suitable for furniture and cabinet building, wood turning, inlaying, wood carving, and types of wood finishing. Projects are built in fine furniture and cabinets, which include inlaying, overlaying and carving. Prerequisites, WW 61, 62, and 63. Five credits. Each quarter. Daily 2-5. *Swenson*

WW 174. Art Woodwork. This course deals with the decorative means that craftsmen employ to make their products appeal to the artistic taste. The following phases will be treated by lecture and demonstration and supplementary laboratory work. Art turning, chip carving, band saw shaping, scrolling, twisted turning, inlaying and overlaying. Consideration will also be given to decorative effects obtained by two-tone staining, bright colored stains and lacquers, burning, and fine polishing. Prerequisites, WW 61 and 62a. Two credits. Fall, T. Th. 9-12. *Swenson*

Industrial Education

E. C. JEPPSEN, *Head of Department.*
E. A. ROSS, *Professor;* FREDERICK PREATOR, JOSEPH COULAM, *Assistant Professors;* LEROY FRANCE, ANTONE B. KEMP, ..., ..., *Instructors.*

The Industrial Education Department offers a program of professional teacher training in Industrial Arts and Trades and Industries. This program continues throughout the regular school year and into the summer session. Students can complete their undergraduate work and receive a Bachelor of Science degree in Industrial Education by majoring in Industrial Arts or Trades and Industries.

The Master of Science and Master of Education curricula are available for students who wish to do graduate study in Industrial Education.

INDUSTRIAL ARTS

The curriculum in Industrial Arts is composed of three groups of courses, including Arts and Sciences, Education, and a major in Industrial Arts. The Arts and Sciences courses are described in the departments of the School of Arts and Sciences. The Education courses are provided jointly by the School of Education and the Industrial Division. The general education courses are described in the departments of the School of Education and the description of the professional industrial education courses follow the curriculum in In-

*If the lab. has been satisfied for WW 161, 3 hours credit will be allowed for the lecture.

dustrial Arts. The courses for the major in Industrial Arts are described in the Departments of the Industrial Division, namely: Aeronautics, Automotive, Metalwork, Radio, Woodwork, and Industrial Education. The curriculum for the Bachelor of Science Degree in Industrial Arts follows:

CURRICULUM IN INDUSTRIAL ARTS

Degree: Bachelor of Science in Industrial Education
Major: Industrial Arts

Freshman Year

Course	Credits F	W	S
Math. 35, 46	—	5	5
Econ. 51	—	—	5
Psy. 3	—	5	—
Bot. 1	5	—	—
M. W. 51a, 51d	2	—	2
M. W. 91, 92, 93	2	2	2
W. W. 61, 62a	5	2	—
Art 37, 38	—	2	2
P. E. or M. S.	1	1	1
Orientation	0	—	—
	15	17	17

Sophomore Year

Course	Credits F	W	S
Physics 20	5	—	—
Physio. 4	—	5	—
English 10	—	5	—
Pol. Sci. 10	—	—	5
W. W. 72	—	2	—
M. W. 42	—	—	2
Chem. 10	5	—	—
Speech 5	—	—	3
Radio 23	5	—	—
Auto 81a	—	—	2
Art 11, 14	—	2	2
P. E. or M. S.	1	1	1
Electives	2	3	3
	18	18	18

Junior Year

Course	Credits F	W	S
I. E. 102, 109, 113	3	3	3
Ed. 113, 114	3	3	—
Radio 101	—	—	5
Psy. 102, 102b	5	—	—
Eng. 110	—	4	—
Auto 84	—	—	2
Auto 51, 52, 53	3	3	3
Jewelry & Lapidary	—	2	—
M. W. 40	—	—	2
Electives	3	3	3
	17	18	18

Senior Year

Course	Credits F	W	S
I. E. 108, 110, 112	5	3	8
W. W. 170, 174	—	3	2
M. W. 52a, 141	—	2	2
Auto 91, 162	2	—	3
Physio. 108	5	—	—
Econ. 125	—	3	—
Electives	5	6	3
	17	17	18

Industrial Arts—Professional Industrial Education Courses

I. E. 102. Instructional Aids. Instruction in the purpose, types, sources, preparation and proper use of audio and visual aids for classroom instruction. The units of this course include samples, models, charts, graphs, slides, still film, movie film, sound film, stereoptican projection, recordings, sound systems and other aids suitable for classroom and auditorium use. Three credits. Fall, M. W. F. 8. *Jeppsen*

I. E. 108. Methods of Teaching Industrial Arts. This course presents the various teaching methods and techniques used in Industrial Arts classrooms and laboratories. Discussion, demonstration, conference and other of the more important methods of teaching will be emphasized. Opportunity will be given prospective teachers to present instructional material by these recommended methods. Five credits. Fall, Daily 9. *Preator*

I. E. 109. Course of Study Building in Industrial Arts. An analysis of steps in the construction of courses of study based on industrial requirements. Practice will be given in developing occupational analyses, teaching outlines, lesson

plans, instruction sheets, progress charts and completion tests. Three credits. Winter, M. W. F. 9. *Preator*

I. E. 110. Shop Organization and Management. Instruction in the organization and management of Industrial Arts shops. Attention will be drawn to the differences between the unit shop and the general shop organizations. The units of this course include equipment, materials, supplies, methods of purchasing, financial control, and problems in shop arrangement and management. Three credits. Winter, M. W. F. 8. *Jeppsen*

I. E. 112. Observation and Practice Teaching. Observation and practice teaching in various Industrial Arts shops near the College. Applications for this course should be made one quarter in advance. Eight credits. Winter or Spring, Daily 1-5. *Jeppsen*

I. E. 113. Driver Education and Traffic Safety. This course is designed to acquaint prospective teachers and others with available instructional materials in the field of driver education and the latest methods of presenting such materials in the classroom and on the road. Supervision during practice will be arranged for each student. Three credits. Spring, Lecture T. Th. 8; Lab., M. W. F. 8. *Jeppsen and Carter*

TRADE AND INDUSTRIES

(TWO-YEAR CERTIFICATE)

In cooperation with the federal and state departments of education, the Industrial Education Department offers specialized training in seven of the major trades in our state. These include Acetylene and Electric Welding, Aircraft and Engine Mechanics, Auto Body and Paint Reconditioning, Automotive Repair, Carpentry and Building Construction, Machine Shop Practice, Radio Service and Repair.

This program offers technical training in the practices of industry with latest methods, modern equipment, and live and productive work. The instructors are all men with years of successful trade experience and carry with them the full respect of their trade. Each course is two years (six quarters) in length and includes technical instruction one hour daily, shop practice in the laboratory four hours daily, and general related information one hour daily.

A close cooperation is maintained between the school and industry with problems of training and placing of students considered jointly with a trade advisory committee for each trade. Students satisfactorily completing the two-year training program will be awarded a state certificate and will be prepared to enter the trade as a mechanic helper or an advanced apprentice. Further description of these courses will be found in the departments where they are listed. For entrance requirements, see page 49.

ACETYLENE AND ELECTRIC WELDING

(Type A Unit Day Trade)

First Year:	F	W	S	Second Year:	F	W	S
Technical, Auto 41, 42, 43	5	5	5	Technical, Auto 44, 45, 46	5	5	5
Shop, Auto 41a, 42a, 43a	5	5	5	Shop, Auto 44a, 45a, 46a	5	5	5
Auto 81a, 81c, 84	2	3	2	M. W. 51a, 51c, 50	2	3	3
Related, W. W. 6, 7, 8	3	3	3	Related, Eng. 17, 18, 19	3	3	3
M. W. 91, 92, 93	2	2	2	Auto 48, 49, 50	2	2	2
	17	18	17		17	18	18

AIRCRAFT AND ENGINE MECHANICS

(Type A Unit Day Trade)

First Year:	F	W	S
Technical, Aero 1, 2, 3,	5	5	5
Shop, Aero 1a, 2a, 3a	5	5	5
M. W. 51b, 51c, 52b	3	3	3
Related, W. W. 6, 7, 8	3	3	3
Eng. 17, 18, 19	3	3	3
	19	19	19

Second Year:	F	W	S
Technical, Aero 11, 12, 13	5	5	5
Shop, Aero 11a, 12a, 13a	5	5	5
Auto 91, 92, Aero 14	3	3	3
Related, M. W. 91, 92, 96	3	3	3
Auto 48, 49, 50	2	2	2
	18	18	18

AUTO BODY AND PAINT RECONDITIONING

(Type A Unit Day Trade)

First Year:	F	W	S
Technical, Auto 11, 12, 13	5	5	5
Shop, Auto 11a, 12a, 13a	5	5	5
Auto 91, 191, 192	3	3	3
Related, W. W. 6, 7, 8	3	3	3
M. W. 91, 92, 93	2	2	2
	18	18	18

Second Year:	F	W	S
Technical, Auto 14, 15, 16	5	5	5
Shop, Auto 14a, 15a, 16a	5	5	5
Auto 51, 52, 53	3	3	3
Related, Eng. 17, 18, 19	3	3	3
Auto 48, 49, 50	2	2	2
	18	18	18

AUTOMOTIVE REPAIR

(Type A Unit Day Trade)

First Year:	F	W	S
Technical, Auto 1, 2, 3	5	5	5
Shop, Auto 1a, 2a, 3a	5	5	5
Auto 91, 81b, M. W. 51b	3	3	3
Related, W. W. 6, 7, 8	3	3	3
M. W. 91, 92, 93	2	2	2
	18	18	18

Second Year:	F	W	S
Technical, Auto 4, 5, 6	5	5	5
Shop, Auto 4a, 5a, 6a	5	5	5
Auto 61, 62, 162	3	3	3
Related, Eng. 17, 18, 19	3	3	3
Auto 48, 49, 50	2	2	2
	18	18	18

CARPENTRY AND BUILDING CONSTRUCTION

(Type A General Industrial)

First Year:	F	W	S
Technical, Auto 81b, W. W. 60, 73	3	2	3
W. W. 68, M. W. 40	—	3	2
Shop, W. W. 61, 62, 63	5	5	5
W. W. 171a, 171c, 172a	2	3	2
Related, W. W. 6, 7, 8	3	3	3
M. W. 91, 92, 93	2	2	2
	15	18	17

Second Year:	F	W	S
Technical, C. E. 112, W. W. 72, 170	3	2	3
M. W. 94, W. W. 174	—	3	2
Shop, W. W. 64, 65, 66	5	5	5
W. W. 172c, 173a, 173c	3	2	3
Related, Eng. 17, 18, 19	3	3	3
Auto 48, 49, 50	2	2	2
	16	17	18

MACHINE SHOP PRACTICE

(Type A General Industrial)

First Year:	F	W	S
Technical, Aero 1, Auto 2, M. W. 50	5	5	3
Shop, M. W. 51, 52, 53	5	5	5
Auto 81a, 81c, 82b	2	3	3
Related, W. W. 6, 7, 8	3	3	3
M. W. 91, 92, 93	2	2	2
	17	18	16

Second Year:	F	W	S
Technical, M. W. 95, 96, 181b	3	3	3
Shop, M. W. 151, 152, 153	5	5	5
Auto 91, 191, W. W. 160b	3	3	3
Related, Eng. 17, 18, 19	3	3	3
Auto 48, 49, 50	2	2	2
	16	16	16

RADIO SERVICE AND REPAIR

(Type A Unit Day Trade)

First Year:	F	W	S
Technical, Radio 1, 2, 3	5	5	5
Shop, Radio 1a, 2a, 3a	7	7	7
Related, W. W. 6, 7, 8	3	3	3
M. W. 91, 92, 93	2	2	2
	17	17	17

Second Year:	F	W	S
Technical, Radio 10, 11, 12	5	5	5
Shop, Radio 10a, 11a, 12a	7	7	7
Related, Eng. 17, 18, 19	3	3	3
Auto 48, 49, 50	2	2	2
	17	17	17

SCHOOL OF FORESTRY

PAUL M. DUNN, *Dean*

Departments

Forest Management 232

Range Management 235

Wildlife Management 238

General Information

THE fortunate geographical location of this School of Forestry, the opportunity for self help for qualified men and great need for better management of the forest, range and game resources, provide an excellent combination of circumstances and opportunities for the proper training in the management of wild lands and their resources.

Naturally vegetated lands in Utah comprise more than 90 per cent of the total state area. The Cache National Forest, within two miles of school, the Bear River Migratory Bird Refuge within 40 miles, vast areas of range lands providing both grazing and soil conservation problems, all offer unlimited study projects. Herds of elk and deer approach the campus during the winter and may be seen from the classroom windows.

The comparative newness of the fields of forestry, range, wildlife, soil conservation and forest recreation, and the unquestioned need for their correlation in permanent wild land management, present excellent opportunities for those desiring to participate in these fields of public service. The purpose stressed is the handling of wild lands so that they may be of continuing benefit for present and future generations of citizens.

The efficient management of wild land resources in all its phases requires a broad fundamental knowledge of many of the sciences and arts. For this reason, most of the forest schools throughout the nation have recognized that the usual four-year program of study is inadequate to give the student sufficient training in both the basic sciences and in the technical subjects of the chosen field. It is therefore strongly recommended that a five-year course of study be pursued.

The first two years of the regular four-year course of study are practically the same in all departments, with specialization in a major field beginning in the third or junior year. This program gives the student only a minimum of basic training and cultural foundation. The five-year program would provide for an additional year devoted principally to general training in the arts and sciences. This would furnish a better foundation for the technical studies of the last two years and a superior cultural background which is so necessary for advancement in public service fields.

The wildlife management department is greatly enhanced through the establishment of two research agencies of the U. S. Fish and Wildlife Service on the campus, which are housed in the forestry building. One of the ten Federal Wildlife Research Units, a cooperative project with the college, the Utah Fish and Game Department, the U. S. Fish and Wildlife Service, and the American Wildlife Institute is located here under the leadership of Dr. D. I. Rasmussen. A regional research office of the Fisheries Division is also located here under Dr. Stillman Wright. The two agencies assist to some extent in class and laboratory instruction, and are especially valuable in directing the research of graduate students. Graduate fellowships have been made available through the Wildlife Research Unit.

Courses of Study

The curriculum of this school is designed to train men for private, government or state work in (1) technical Forest Management, (2) technical Range Management, and (3) technical Wildlife Management. The Forestry majors may choose, at the beginning of the senior year, either to specialize in Forest Management or Forest Utilization. The Range majors may choose, in the senior year, to specialize either in Range Management or Soil Conservation. Special instruction is offered in the fields of Forest Radio and Forest Recreation.

Summer Camp

The School of Forestry has purchased and leased 3,000 acres of forest and range land approximately 25 miles from the campus within the Cache National Forest, where summer camp facilities have been established. Summer field

instruction is required for graduation in addition to the regular 12 quarters of course work. Also, at least one season of field experience with a recognized conservation agency is expected of all students.

Technical field instruction in Forestry, Range and Wildlife courses is given at summer camp, including: Forestry 96, Forestry 97, Range 98, Wildlife 99, for a total of 12 hours. Attendance at this camp is required between the sophomore and junior year and is prerequisite to the technical courses of the junior and senior years. The summer camp opens on the second Monday, following the close of the spring quarter and continues for a period of ten weeks. Twelve credits are allowed for the complete course. A charge of $20 is made for tuition, and board is provided on a cost basis. All junior college students planning on entering this school at the beginning of their junior year, should make arrangements to attend the camp during the summer following their graduation from the junior college.

Field Trips

A definite schedule of field trips is planned throughout the year as a part of the regular class instruction. Courses requiring attendance on field trips are so designated under course descriptions. Charges for transportation are levied at the rate of one cent per mile. The total expense on this account during any one quarter varies between $1.00 and $5.00 per course.

In addition to the trips scheduled for the individual courses, each major department conducts an extensive field trip in the spring quarter, covering all available branches of the major field. This trip is required of all seniors prior to graduation. The trip for wildlife majors is usually scheduled over the first week of May, and for range majors over the second week. The trip for forestry majors is more extensive and covers a period of ten days or two weeks just prior to the end of the spring quarter.

Scholarship

A high standard of scholarship must be maintained by the student interested in Forestry or the associated fields because of the technical nature of the work and the high professional standard; the character of the Civil Service examinations that are required for Federal Service; and the increased competition as a result of the heavy enrollment in forestry throughout the country.

Each individual's record of scholarship and field ability will be the basis for entrance into this school, for continuation through the technical courses, and for consideration for employment, both temporary and permanent. The faculty reserves the right to accept only credit with grades of 75 per cent or above toward graduation.

Minors

Students other than Forestry School majors may complete a minor in any of the three departments of the School of Forestry upon completion of 18 credit hours approved by the head of the department concerned. Minors are not required of Forestry School graduates but may be obtained in related fields by approval of the major professor and the department concerned.

General Requirements

The following general requirements must be met by all students graduating from the School of Forestry:

A. One full term of forestry summer camp.

B. At least 192 quarter hours exclusive of summer camp, basic military science, and physical education.

C. All courses prescribed under the study program of the chosen major.

D. All of the following general requirements:

1. English, Speech, or Literature, 17 hrs., of which at least 3 must be speech, and of which 5 must be English Composition.
2. Social Science—8 hrs.
3. General Geology—5 hrs.
4. General Physics—5 hrs.
5. Ability to type.
6. Military Science or Physical Education—6 quarters.

Electives: A wide latitude is allowed in the choice of electives. In the freshman and sophomore years they should be chosen with the object of improving the cultural background. Faculty advisers will assist the student in making a choice and the courses selected must meet their approval.

BASIC COURSES

Required of all students majoring in the School of Forestry.

Freshman Year				Sophomore Year			
Course	F	W	S	Course	F	W	S
Bot. 21, 22, 23	3	3	3	Chem. 10, 11, 12	5	5	5
*Math. 35, 46	*	5	5	A. E. 3, 5	5	—	3
Econ. 51	5	—	—	C. E. 60	2	—	—
For. 1	3	—	—	Agr. 6	5	—	—
Electives	5	8	8	Bot. 30	—	—	5
				Electives	—	12	4
	16	16	16		17	17	17

Forest Management

P. M. DUNN, *Professor;* R. P. MCLAUGHLIN, J. W. FLOYD, *Associate Professors;* G. H. BARNES, *Assistant Professor.*

Upon completion of the course prescribed below, students are granted the degree of bachelor of science, major in Forest Management.

The course is designed to give the student a solid background in all branches of forestry, including the growing, protection, harvesting and utilization of timber crops. Supplementary uses of forest land for grazing, wildlife and recreation are also considered to develop the ideal of multiple land use management.

STUDY PROGRAM

Freshman and Sophomore Years—See Basic Courses Above.

Junior

		No.			Credits		
Name of Course	Dept.	F	W	S	F	W	S
Forest Measurements I, II	For.	106	107	—	4	5	—
Dendrology	For.	112	—	113	2	—	3
Logging, Administration	For.	125	132	—	3	3	—
Wood Technology, Fire Protection	For.	—	126	118	—	3	3
Range Management	Range	162	—	—	4	—	—

*Students presenting less than 1½ units of high school algebra are required to register for Math. 34, 3 credits, prior to taking Math. 35.

General Wildlife Management	Wildlife	—	—	150	—	—	5
Forest Entomology	Zoology	105	—	—	3	—	—
Plant Physiology	Botany	—	—	120	—	—	5
Milling, Forest Problems	For.	—	127	145	—	3	1
Elective		—	—	—	2	3	—
TOTALS					18	17	17

Senior

Name of Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Siviculture I, II, Planting	For.	114	115	116	5	4	3
Forest Management, Finance	For.	121	122	—	5	3	—
Forest Pathology	Botany	—	140	—	—	4	—
Forest Economics, Products	For.	—	133	128	—	4	3
Forest Problems	For.	145	—	—	2	—	—
Improvements and Recreation	For.	—	—	137	—	—	4
Adv. Composition	English	110	—	—	4	—	—
Forest Seminar	For.	142	143	144	1	1	1
Elective		—	—	—	—	—	5
TOTALS					17	16	16

Those registering in Forest Utilization omit Forestry 132 Winter quarter, and take Forestry 129 Fall, Forestry 127 Winter.

Electives: In the junior and senior years, electives should be chosen with the object of broadening a specific field of study. Courses selected must meet the approval of the major professor.

1. General Forestry. A general survey of the profession of forestry, range, soil conservation, and wildlife; character of the work; and relation of multiple uses of wild land to the welfare of the state and the nation. Three credits. Fall, M. T. W. 3. *Floyd*

10. General Conservation. An introduction to conservation problems designed to acquaint students with the nature and extent of the organic resources of the United States and methods of conserving them. Forestry, soil conservation, range management and wildlife aspects are considered. Not open to majors in the school of forestry. Three credits. Winter, M. W. F. 9. *Smith*

41. Utah Trees. Characteristics and importance of the native and introduced conifers and broad-leafed trees of Utah. Not open to forest school majors. Two lectures, one lab. Three credits. Spring, time arranged. *McLaughlin*

96. Surveying Practice. Practical problems involving the use of the level, transit and plane table. Road location, elementary curves and placement of slope stakes. Twelve days. Three credits. Summer camp. *Floyd*

97. Forest Practice. Practical work in forest mapping, timber cruising, timber marking; inventories and growth of immature timber stands; stem analysis, taper measurements, sample plots. Twelve days. Three credits. Summer camp. *Barnes*

106. Forest Measurements I. Measurements of timber in the log, the tree, and the stand. Log rules and volume tables. Timber cruising practices. Prerequisite, summer camp. Four credits. Fall, M. W. F. 9; Lab., T. 2-5. *Barnes*

107. Forest Measurements II. Statistical methods useful in analyzing forest data. Volume and yield table compilation. Growth of even-aged, all-aged, and residual cut-over stands. Prerequisite, For. 106. Five credits. Winter, M. W. F. 11; Lab., T. Th. 9-12. *Barnes*

112. Dendrology I. Characteristics, distribution, and economic importance of the principal North American conifers. Two credits. Fall, F. 1; Lab., F. 2-5; Field trips arranged. *McLaughlin*

113. Dendrology II. Characteristics, distribution, and economic importance of the principal North American hardwoods. Three credits. Spring, M. 1; Lab., M. W. 2-5; Field trips arranged. *McLaughlin*

114. Silviculture I. Climatic, physiographic, and biotic factors. Natural regeneration of timber stands. Prerequisites, For. 112, 113. Five credits. Fall, Daily 8. *Dunn*

115. Silviculture II. Silviculture practices in the various forest regions of the U. S. Prerequisite, For. 114. Four credits. Winter, M. T. W. F. 8. *Dunn*

116. Forest Planting. Seed collection and storage, nursery practice and field planting. Prerequisite, For. 114. Three credits. Spring. T. Th. 8; Lab., F. 2-5; Field trips arranged. *Dunn*

118. Fire Protection. Effect, prevention, presuppression, and suppression of forest fires. Three credits. Spring, M. W. F. 8. *Barnes*

121. Forest Management. The place of forest management in forestry practice. Timber production as a business; sustained yield management; forest management plans. Prerequisites, For. 106, 107. Five credits. Fall, M. W. Th. F. 10; Lab., T. 2-5; Field trips arranged. *Barnes*

122. Forest Finance. Forest land and crop valuation. Investment and costs in forest production, forest taxation, stumpage values. Prerequisites, For. 114, 121. Three credits. Winter, T. Th. 2; Lab., F. 2-5. *Barnes*

125. Logging. Methods of handling timber from tree to mill in the various forest regions. Three credits; Field trips arranged. Fall, M. W. F. 8. *McLaughlin*

126. Wood Technology. Structure and identification of the economic woods of the United States. Three credits. Winter, Lab., M. W. F. 2-5. *McLaughlin*

127. Milling. Manufacturing, grading, seasoning, and preservation of lumber. Three credits. Winter, M. W. F. 10. *McLaughlin*

128. Forest Products. A study of the wood using industries and their manufactured products. Three credits. Spring, M. W. F. 8. *McLaughlin*

129. Mechanical Properties. A study of the factors affecting the strength of wood. Two credits. Fall, T. Th. 9. *McLaughlin*

For. 132. Public Land Administration. Range, forest and wildlife administration; organization and personnel problems of the U. S. Forest Service, Grazing Service, Park Service and other conservation agencies. Three credits. Winter, T. W. 1 and 1 hour arranged. *Floyd*

For. 133. Forest Economics and Policy. Economic problems in the production, distribution and consumption of forest products. Development of federal, state and private forest policies. Four credits. Winter, M. W. F. 9; Lab., M. 2-5. *Floyd*

137. Improvements and Recreation. Roads, trails and structures necessary in forest management. Recreational use of forests and the classification and development of areas suitable for this purpose. Four credits. Spring, M. T. W. Th. 9; Field trips arranged. *Barnes*

142, 143, 144. Forestry Seminar. Review and discussion of current forestry problems and practices. Lectures and labs. One credit each quarter. Fall, Winter, and Spring. Time arranged. *Staff*

145. Forest Problems. Individual accomplishments of an original problem related to the major work. One to three credits. Any quarter. Time arranged. *Staff*

201, 202, 203. Advanced Forestry Seminar. Review and discussion of more advanced current literature. Designed for students following a five-year program. Two credits each quarter. Fall, Winter, and Spring. Time arranged. *Staff*

Range Management

L. A. STODDART, *Professor;* A. D. SMITH, *Assistant Professor.*

Upon completion of the course prescribed below, students are granted the degree of bachelor of science, major in range management.

The course in range management acquaints the student with proper methods of maintaining the production of native lands and the proper methods of managing range livestock. An opportunity is given to take special instruction in soil conservation with the election of certain courses during the senior year. Studies in soil conservation acquaint the student with the problems of soil erosion and the methods of conserving water and of managing lands, especially lands under native vegetation, in such a manner that productivity will be maintained.

The degree of master of science in range management will be granted upon completion of a prescribed course of study. A period of one to two years and a total of forty-five residence credits, at least ten being individual research, will be required. Students desiring this advanced work should obtain permission from the major professor at least twelve months before the degree is to be granted, at which time a program of research and study will be outlined. The desire of the individual determines largely the nature of the program and hence no outline can be included in this catalogue. The choice of the research problem and of the specialization of study rests largely with the student. Adequate facilities are available to allow special emphasis in the study program upon soil conservation, animal husbandry, botany, wildlife, economics, or agronomy. A bachelor's degree in range management or a related subject is a prerequisite for graduate work in this field.

Two graduate assistantships are granted annually. One, a research assistantship, is granted by the Utah Experiment Station and pays $600 for a 12-month period. The second is a teaching assistantship, paying $400 for a 10-month period.

Graduation Requirements for the B.S. Degree in Range Management

A. Completion of the basic freshman and sophomore study program as listed for the School of Forestry. (page 232)

B. Completion of the following:

1. Ten hours of forestry in addition to Forestry 1, to be elected, and approved by adviser.
2. Ten hours of animal husbandry exclusive of poultry courses.

C. Completion of the junior study program and one of the senior study programs listed below.

STUDY PROGRAM

Freshman and Sophomore years—see basic courses, School of Forestry, (Page 232).

Junior

Name of Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Land Economics and Utilization	Ag. Ec.	----	----	106	----	----	5

Agrostology	Botany	—	108	—	—	4	—
Plant Ecology	Range	126	—	—	5	—	—
Plant Physiology	Botany	—	120	—	—	5	—
Range Management	Range	162	—	—	5	—	—
General Wildlife Management	Wildlife	—	—	150	—	—	5
Range Problems	Range	—	—	195	—	—	1
Forbs & Browse, Poisonous Plants	Range	177	—	179	2	—	2

Senior—Range Management

Name of Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Statistics	Math.	111	—	—	5	—	—
Advanced Range	Range	—	164	—	—	3	—
Range Economics	Range	181	—	—	3	—	—
Forage Crops	Agron.	—	—	103	—	—	3
Range Problems	Range	195	195	—	1	1	—
Technical Writing	English	—	—	111	—	—	4
Seminar	Range	192	193	194	1	1	1

Senior—Soil Conservation

Name of Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Soil Management	Agron.	—	—	108	—	—	3
Soil and Water Conservation	A.E.	—	—	108	—	—	3
Statistics	Math.	111	—	—	5	—	—
Soil Conservation	Range	167	—	—	4	—	—
Vegetation Influences	Range	—	182	—	—	3	—
Geology of Conservation Problems	Geol.	115	—	—	5	—	—
Hydrology and Meteorology	C.E.	—	—	143	—	—	4
Range Problems	Range	195	195	—	1	1	—
Technical Writing	English	—	—	111	—	—	4
Seminar	Range	192	193	194	1	1	1

Electives in the junior and senior year must include 10 hours of forestry in addition to Forestry 1, and 10 hours of animal husbandry exclusive of poultry courses.

Minor—Range Management

The following courses are suggested for students wishing to minor in range management. These requirements are subject to change upon approval of the department head.

Range 126	Plant Ecology	5 hours
Range 162	Range Management	5 hours
Range 177	Forbs and Browse	2 hours
Range 178	Range Grasses	2 hours
Range 179	Poisonous Plants	2 hours
Range 192, 193, 194	Range Seminar	3 hours

98. Range Practice. Field work in range management involving training in making range reconnaissance, estimating palatability and utilization, and conducting technical range research. In addition some time will be devoted to inspecting range improvements and making management plans. Twelve days at Forestry summer camp. Three credits. *Smith*

126. Plant Ecology. An analysis of habitat factors as they influence plant growth and distribution. Attention will be given to plant succession and competition and to detailed methods of studying and mapping vegetation. Prerequisite, Botany 30. Five credits. Fall, M. T. Th. F. 11; Lab., M. 2-5; Field trips arranged. *Stoddart*

160. Principles of Managing Range Lands. A general course in range management designed to give students not majoring in the field a knowledge of how to evaluate, increase and perpetuate natural range resources. Attention will be given to various grazing systems, livestock handling practices, and to the physiological effects of grazing upon plant life. Range maintenance

and revegetation problems of various western range areas will be discussed, and students will be given an opportunity to become acquainted with the important native forage plants and poisonous plants of each. Field trips and laboratory work on range plants. Prerequisite, Botany 22 or Botany 12. Three lectures, two labs. Five credits. Spring, T. Th. 11, T. Th. 2-5. One lecture arranged. *Smith*

162. Range Management. A technical course dealing with problems met in managing native range lands, including a study of grazing regions and the problems of each; revegetation of range lands; maintenance of production; utilization of range forage; and range livestock management as it affects range vegetation. Five credits. Field trips arranged. Prerequisites, Botany 30. Fall, M. T. W. F. 10; Lab., Th. 2-5. *Smith*

164. Advanced Range. Technical problems in field methods, grazing reconnaissance, management plans, range planting, range administration, and systems of grazing for range improvement. This course is especially designed to train men in range research and technical problems of administration. Prerequisites, Range 162 and Range 126. Three credits. Winter, M. W. F. 9. *Stoddart*

167. Soil Conservation. This course is designed to give the student a broad picture of the entire field of soil conservation, including the history, causes, results and methods of controlling soil erosion. Special emphasis is placed upon conservation of native range lands, but attention is also given to erosion on farm and forest lands. Should be preceded or accompanied by Agronomy 6 and Range 126. Four credits. Fall, M. W. F. 10; Lab., S. 9-12. Field trips arranged. *Stoddart*

177. Range Forbs and Browse. A study of important non-grasseous forage plants, including identification, region of growth, habitat, palatability, and forage value. Prerequisite, Botany 30. Two credits. Fall, W. 1; Lab., W. 2-5. *Smith*

178. Range Grasses. A study of the economic value of important range grasses, including identification, region of growth, habitat, palatability, and forage value, with special reference to their use by wild animals. Not open to range management majors. Prerequisite, Botany 30. Two credits. Winter, W. 1; Lab., 2-5. *Smith*

179. Range Poisonous Plants. A study of important poisonous plants, including general methods of livestock handling and range management practices, to avoid losses from poisonous plants. Included are identification, region of growth, habitat, poisoning symptoms, remedies, and control measures for each plant discussed. Prerequisite, Botany 30. One lecture, one lab. Two credits. Spring, W. 1; Lab., W. 2-5. *Smith*

181. Range Economics. A study of the development of the range industry, cost of production, range land utilization, organization of cattle and sheep industry, and value of range forage. Prerequisite, Range 162. Three credits. Fall, M. T. Th. 12. *Smith*

182. Vegetation Influences. A course in which the influences of vegetation on the hydrological cycle are studied. Emphasis will be given influences of vegetation on percolation of ground waters, runoff, soil erosion and the regimen of streams. Three credits. Winter, M. T. Th. 12. *Smith*

192, 193, 194. Range Seminar. Current range management research and problems, including a systematic review of the field of range management and related fields. This includes annual three day range trip. Prerequisite, Range 162. One credit each quarter. Fall, T. Th. 9; Winter, T. Th. 10; Spring, T. Th. 10. *Staff*

195. Range Problems. Individual study and research upon a selected range problem approved by the instructor. This course is designed to obtain data for the preparation of a thesis. Open to range management majors or to

others by approval of instructor. One to three credits. Fall, and Winter, time arranged. Spring. Th. 12. *Staff*

200. Thesis. Original research and study on a problem in range management or soil conservation, must be followed by the preparation of a formal thesis. This course is open only to graduate students and must be approved by the major professor. One to 15 credits. Any quarter, time arranged. *Stoddart*

205. Graduate Seminar. Current scientific papers in range management, soil conservation, and related subjects. Not open to undergraduate students. One credit. Fall and Winter, time arranged. *Staff*

206. Research Methods. A study of research methods in range management and related subjects. A review of scientific literature in the field and an analysis of results. Graduate students by approval. Two credits. Winter, T. Th. 9. *Stoddart*

Wildlife Management

G. H. KELKER, *Assistant Professor;* D. I. RASMUSSEN, *Associate Professor and Associate Biologist, U. S. Fish and Wildlife Service;* STILLMAN WRIGHT, *Associate Aquatic Biologist, U. S. Fish and Wildlife Service.*

Upon completion of the basic courses and the upper division requirements as outlined in wildlife management, students are granted the degree of bachelor of science major in Wildlife Management. The basic courses of the freshman and sophomore years are tabulated on page 232. Prospective wildlife majors should elect in these schedules Zoology 3, 4 and 13.

Through the cooperation of the Fish and Wildlife Service of the U. S. Department of Interior, the Utah State Fish and Game Department, the American Wildlife Institute, and the College, one of the ten federally sponsored Wildlife Research Units was established at Utah State College in 1935. Through the establishment of this Wildlife Research Unit facilities are provided enabling a limited number of students to do graduate work leading to a master of science degree in Wildlife Management. Graduate work will consist primarily of individual research problems and field work. Funds are available for two to four graduate research fellowships paying $500 to $720 per year for students doing work in this field. A bachelor's degree in Biology, Forestry, or Agriculture from a college of recognized standing is the prerequisite for graduate work in this field. Candidates for fellowships will be chosen from applicants who submit formal application with transcript of college credits and references on or before May 1.

STUDY PROGRAM

Freshman and Sophomore Years — See Basic Courses, School of Forestry, page 232.

Junior

Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Ichthyology, Mammalogy, Ornithology	Zoo.	155	122	121	3	4	4
Plant Ecology	Range	126	—	—	5	—	—
Forbs and Browse, Grasses	Range	177	178	—	2	2	—
Range Management	Range	162	—	—	4	—	—
Field and Laboratory Technique	Wildlife	—	169	—	—	4	—
Principles of Wildlife Management	Wildlife	145	—	—	3	—	—
Wildlife Problems		—	—	—	—	7	12
Electives	Wildlife	—	—	170	—	—	1
TOTAL					17	17	17

Senior

Course	Dept.	No. F	No. W	No. S	Credits F	Credits W	Credits S
Silviculture	For.	114	----	----	5	----	----
Animal Ecology	Zoo.	140	----	----	3	----	----
Management of Big Game; Game Birds	Wildlife	----	153	154	----	5	5
Wildlife Problems	Wildlife	170	170	----	1	1	----
Wildlife Seminar	Wildlife	157	158	159	1	1	1
Adv. Composition	English	----	110	----	----	4	----
Fish Culture	Wildlife	----	----	165	----	----	2
Limnology	Bot.	110	----	----	4	----	----
Electives		----	----	----	3	6	9
TOTAL					17	17	17

Electives: In the junior and senior years electives should be chosen with the object of broadening a specific field of study. Courses selected must meet the approval of the major professor.

99. Wildlife Practice. Stream surveys and mapping for improvement purposes and for restocking; the use of census methods for big game, game birds, and rodents; cover mapping; preparation of animal skins; and study of deer and elk ranges. Twelve days. Three credits. Summer Camp. *Kelker*

145. Principles of Wildlife Management. A study of the properties of animal populations, including food cycles, niches, pyramid of numbers, fluctuation, tolerance, movements, and succession. Three credits. Fall, T. Th. S. 8. Field trips arranged. *Kelker*

150. General Wildlife Management. Principles of animal ecology and wildlife management; life histories, ecology, economics, and management phases of important species of big game, upland game, waterfowl, and fish. No credits allowed wildlife majors. Five credits. Field trips arranged. Spring, Daily 11. *Kelker*

153. Management of Big Game. Life histories, distribution, numerical variation, enemies, and plans for management of native big game animals. Prerequisites, Wildlife 145, Zoology 140. Three lectures, field trips, and term paper. Graduate credit allowed. Five credits. Winter, M. W. F. 11, two hours arranged. *Kelker*

154. Management of Game Birds. Life histories, distribution, environmental needs, enemies, and plans for management of native and introduced game birds. Prerequisites, Wildlife 145, Zoology 140. Four lectures, field trips, and term paper. Graduate credit allowed. Five credits. Spring, Daily 9. *Kelker*

155. Economic Relations of Wild Animals. Economics, distribution, control methods, and life histories of forest and range mammals and birds, with special reference to rodents and fur bearers. Three credits. Winter, T. Th. 9; Lab., F. 2-5. *Kelker*

157, 158, 159. Wildlife Seminar. Discussion of current developments in Wildlife Management. One credit each quarter. Fall, Winter, and Spring, time arranged. *Kelker*

165. Fish Culture. Principles of lake and stream improvement; food habits of game fishes, propagation methods, and common fish diseases. Prerequisites, Zoo. 155, Zoo. 138, and Botany 110. Graduate credit allowed. Two credits. Spring, time arranged for one lecture and one lab. *Kelker*

169. Field and Laboratory Technic. Study of the scientific method; training in field observations and note taking; data analysis, hair, feather, bone, and seed identification. Field trips. Four credits. Winter, M. W. 8; Lab., M. 2-5, Sat. 8-12. *Kelker*

170. Wildlife Problems. Individual accomplishments of original problem in Wildlife Management. One to three credits. Any quarter. Time arranged. *Staff*

257, 258, 259. Wildlife Seminar. Discussion of current developments in Wildlife Management. Two credits each quarter. Fall, Winter, and Spring, time arranged. *Rasmussen*

270. Wildlife Thesis. (Graduate students.) Individual research is assigned to qualified students in problems of Wildlife Management. Five to ten credits per quarter. Any quarter. Time arranged. *Staff*

SCHOOL OF HOME ECONOMICS

CHRISTINE B. CLAYTON, *Dean.*

Departments

Child Development and Parental Education 244

Foods and Nutrition and General Home Economics 247

Textiles and Clothing 250

General Information

THERE is an ever increasing realization that homes which are satisfying are homes which endure. The quality of home life determines the standards of the community, state and nation. Education for successful homemaking is considered of paramount importance to the welfare of the American home.

An appreciation and understanding of family relations, child guidance and the relationship of the home to the world outside is of fundamental importance to successful home living. A great diversity of skills in the performance of home duties is also a necessary part of the training for efficient home management.

The School of Home Economics is organized for study in all of the fields essential to successful home life. The courses in this school are arranged in three major departments, as follows: Child Development and Parental Education; Foods and Nutrition; Textiles and Clothing. Students desiring to prepare for specialization may major in any one of these fields. Consult major department write-ups for requirements and suggested registration.

A minor field of study may be chosen from any department by the student. The major professor will guide the student in the selection of subjects to be used in the special group. These will be chosen largely from the liberal arts and sciences most closely related to the major.

In addition to the major and minor requirements, all students must take at least 15 hours of work in other phases of Home Economics before graduation. These 15 hours may be included in the special group or be used toward the minor requirements.

The specialized training in a major field is preparatory to positions in the commercial field, in teaching, in extension service, in hospital dietitianships, in social service, in parent education, in research, in business, and in interior decoration. New fields of usefulness are constantly opening up for the young woman who is well trained in Home Economics.

All students contemplating high school teaching in Utah or neighboring states should register for the "Prescribed Course for Teachers of Vocational Home Economics." This is a carefully planned sequence of subjects extending over four years and leading to a Bachelor of Science degree with state certification. This course is also the best preparation for home making.

Many service courses in all fields of Home Economics are offered for the benefit of students registered in other schools of the college. See department write-ups for full details.

A two-year terminal course is offered for students who find it impossible to take the four-year course.

PRESCRIBED COURSE FOR TEACHERS OF VOCATIONAL HOME ECONOMICS

Freshman Year

Fall		Winter		Spring	
Art 1	3	Art 2	3	Psychology 3	5
Bacteriology	5	Physiology 4	5	Economics 51	5
Home Economics 10	1	Nutrition 5	5	Speech	5
Clothing 9	3	Literature 24	4	Home Economics 25	2
Sociology 10	3	Physical Education	1	Physical Education	1
Physical Education	1	Orientation	½	Orientation	½
Orientation	½		18½		18½
	16½				

Sophomore Year

Chemistry 10	5	Chemistry 11	5	Chemistry 12	5
Child Dev. 70	3	Child Dev. 60	5	Sophomore Comp.	5
Home Economics 50	3	Foods 20	4	Home Economics 65	3
Textiles 20	4	Clothing 25	3	Foods 21	4
Physical Education	1	Physical Education	1	Physical Education	1
	16		18		18

Junior Year

Psychology 102 (a and b)	5	Interior Decoration 123	5	Education 120	2
Science	5	Child Dev. 137	4	Clothing 125 or 165	3
Foods 106	3	Literature	5	Dietetics	5
Advanced Composition 110	4	Clothing 115	3	H. E. 149	3
	17		17	Political Science	3
					16

Senior Year

Clothing 150	3	*Education 122	8	Landscape Arch., Foods 180 or Electives	3
H. E. 150	3	Education 112	3	Literature	5
Public Health 108	5	Education 121	4	Clothing 180	5
Education 114	3	Education 113	3		
Music	2		18		13
	16				

The best sequences of subjects are indicated in the above arrangement. Any departure from this program should receive approval of advisor.

Required Field Trip. To observe institutional management and industrial procedures such as woolen mills, hospitals, food manufacturing companies, abattoirs, etc. Required of all Institutional Management and Vocational Home Economics seniors and recommended for all other seniors in the School of Home Economics. Approximate cost—$10.00. Spring Term.

SUMMARY OF REQUIREMENTS FOR TEACHERS' CERTIFICATE IN VOCATIONAL HOME ECONOMICS

Group and college requirements satisfied by this course:

	Credit Hours
Orientation	1½
Composition (including 10, 110)	9
Biological Science (Bacteriology, Physiology)	10
Exact Science (Chemistry 10, 11, 12)	15
Language and Arts (Art 1, 2, Music [2 hours], Lit. [14 hours], Art 123, Speech)	32
Social Science (Psychology, Sociology, Economics, Pol. Science)	16
Physical Education	6
Required Elective in History or Science	5
	94½

*Students preferring to practice teach on the "block" plan should see write-up for Education 121 and 122.

Home Economics Requirements:		
Child Development (24*, 60, 70, 137)	12	
Foods and Nutrition (5, 20, 21, 106, 142)	21	
General Home Economics (10, 25, 50, 65, 123*, 149, 150)	15	
Textiles and Clothing (9, 20, 25, 115, 150, 165, 180)	24	
Required Elective—Foods 180, Landscaping, or other Home Economics course	3	
		75
**Professional and Certification Requirements:		
Education (112, 113, 114, 120, 121, 122)	23	
Psychology (102 a and b)	5	
Public Health (108)	5	
		33
		202½

†SUGGESTED REGISTRATION FOR A TWO-YEAR TERMINAL COURSE IN HOME ECONOMICS

First Year

Course	F	W	S
Elementary Design 1	3	—	—
Art Appreciation 3	—	3	—
Clothing for the College Girl	3	—	—
Elementary Biology or General Bacteriology	5	—	—
Child Guidance 60	—	—	5
Principles of Sociol. 70	—	5	—
Survey of Home Econ.	1	—	—
Meal Preparation 9	3	—	—
Elem. Psychology 3	—	—	5
Fundamental of Speech	—	—	5
Landscape Gardening	—	3	—
Prin. of Nutrition 5	—	5	—
Physical Education	1	1	1
	16	17	16

Second Year

Course	F	W	S
Anat. and Physiol. 4	5	—	—
Mothercraft 70	3	—	—
Housing Problems 65	3	—	—
Home Management 149	—	3	—
Psychology of the Child	—	3	—
Care of the Sick 25	—	—	2
Consumer Education 50	—	—	3
Children's Literature 24	4	—	—
English Composition 10	—	—	5
Principles of Economics	—	5	—
Physical Education	1	1	1
Opera Appreciation	2	—	—
Textile Study 20	—	4	—
Science Elective	—	—	5
	18	16	16

†This program may be adapted to the needs of the student.

Child Development and Parent Education

CHRISTINE B. CLAYTON, *Professor;* VERNA S. CARLISLE, *Assistant Professor in Charge of Nursery School;* RUTH BARNES, *Graduate Assistant in Charge of Nursery School;* RUTH MALIN, *Graduate Assistant in Nursery School.*

Students who select Child Development and Parental Education as a major are required to complete the following courses: Children's Literature, English 24, Nutrition and Growth 35, Children's Clothing 55, Child Guidance 60, Mothercraft 70, Child Psychology 110, Heredity and Eugenics 111, Child Care and Training 138, C. D. 175, and Child Development Seminar 190. Selections to com-

plete the major may be made from the other courses listed, according to the needs and interests of the student.

Other courses, offered by the School of Home Economics, which are recommended for Child Development majors are: Nutrition 5, Clothing 9, Foods 9, Care of Sick 25, Consumer's Education 50, and General Home Economics 150.

Courses recommended for a major in Child Development include:

Story Telling. (See Speech 18.)

Children's Literature. (See English 24.)

Art for Young Children. (See Art 34.)

Nutrition and Growth of Children. (See Foods 35.)

Music for Young Children. (See Music 38.)

Fundamentals of Family Clothing. (See Textiles and Clothing 55.)

Problems of the Family. (See Sociology 71.)

Rhythms and Dramatic Games. (See P. E. 81.)

Child Psychology. (See Psychology 110.)

Heredity and Eugenics. (See Zoology 111.)

Environmental Factors of Child Life. (See Sociology 150.)

Nature Study. (See Zoology 123.)

60. Child Guidance I. Open to all individuals in the College wishing to acquire a knowledge of the development and guidance of children from birth through the elementary school years. This course should be helpful to homemakers, preschool and elementary school teachers, social workers and any one interested in working with children. One 9, one 10, and one 11 o'clock hour must be free each week to allow for scheduling laboratory hours in the nursery school. Specific hours in the nursery school will be assigned at the first class meeting. This course replaces the three credit course formerly taught as C. D. 60. A laboratory fee of $2.00 is required. Five credits. Fall and Winter, M. T. W. Th. 1. *Carlisle*

70. Mothercraft. This course includes a study of the anatomy and physiology of the reproductive system, preparation for motherhood, and the physical care of mother and child from the prenatal period to the end of the first year of the child's life. Prerequisite, Physiology 4. Three credits. Fall, M. W. Th. 1. Winter, M. W. F. 11; M. W. Th. 1; Spring, M. W. Th. 1, M. W. F. 11. *Burns*

137. Child Guidance II. Discussions and readings will relate primarily to the development of adolescents and to the problems common to that stage of childhood. Prerequisite, C. D. 60B. Four credits. Fall, Winter, and Spring, M. T. W. Th. 10. *Carlisle*

138. Survey in Child Guidance and Welfare. For child development majors only. Discussion and readings will relate to the history of the child development movement and to present agencies and programs operating to further the welfare of children. Prerequisite, Psychology 3, Child Guidance 60, and Psychology 110. Five credits. Spring, Daily 1. *Carlisle*

140. Special Problems in Child Development. Open to qualified students majoring in Child Development, upon consultation with instructor. Any quarter. W. 2. Credit varies. *Staff*

175. Practice Teaching in the Nursery School. Opportunity for Child Development majors to apply the principles of child guidance in the nursery school. Four to eight credits, depending on the time spent. Any quarter, Th. 2. *Carlisle*

190. Seminar in Child Development. Discussions and reports of current literature. One or two credits. Spring, T. 4-6. *Carlisle*

208. Research in Child Development. Any quarter. Time and credit arranged. *Staff*

SUGGESTED REGISTRATION FOR A MAJOR IN CHILD DEVELOPMENT AND PARENTAL EDUCATION

Freshman

Fall		Winter		Spring	
Biological Science	5	Physiology	5	Nutrition	5
Textiles 9	3	Meal Prep. 9	3	Cons. Educ.	3
Language or Arts	5	Language or Arts	5	Psych. 3	5
Music 4	2	Music 5	2	Music 30	3
H. E. 10	1	Orientation	½	Orientation	½
Orientation	½	P. E.	1	P. E.	1
P. E.	1		16½		17½
	17½				

Sophomore

Exact Science	5	H. E. 25	2	Soph. Comp. 10	5
C. D. 60	5	Exact Science	5	Social Science	5
Child Lit.	4	Textiles 55	3	C. D. 70	3
Art 51 or 52	3	Mat. and Meth. in P. E.	4	Comm. and Playg'd Rec. and Lead.	4
P. E.	1	Health Ed.	3	P. E.	1
	18	P. E.	1		18
			18		

Junior

Statistics	1	Psych. 110	3	Educ. 103	5
Hered. and Eug.	4	Psych. 112	2	C. D. 35	3
Electives	8	Electives	9	Electives	4
Adv. Comp.	4	Org. and Adm.	3	C. D. 138	5
	17		17		17

Senior

Education 104	16	Electives	12	C. D. 190	2
Education 105		C. D. 175	5	Electives	15
Education 106			17		17

This is just one arrangement of classes that provides for the minimum requirements in regard to groups, major, minor, P. E., general Home Economics, required courses, prerequisites for required courses, and elementary school certification. Other arrangements and choices of courses are possible. A Master of Science degree is offered in this field. For further information see page 62.

Foods and Nutrition and General Home Economics

CHRISTINE B. CLAYTON, *Professor;* PAULINE NUTTER, UNA VERMILLION, *Associate Professors;* ALMEDA P. BROWN, *Associate Professor in Research;* ELNA MILLER, EFFIE S. BARROWS, *Asst. Professors in Extension;* AGNES BAHLERT, FLORENCE THOMPSON, *Asst. Professors;* EDNA PAGE, *Instructor;* ANN BURNS, *Assistant.*

Majors in the fields of foods and nutrition are required to complete the following courses: Foods 5, 20, 21, 35, 105, 106, 141, 143, 180, 190, 191. Those preparing for hospital dietition-interneships or Institution Management fellowships should include Foods 182, Biochemistry, Psychology 102, and Education 120. Majors in Foods should register for Chemistry 3, 4, 5, 121, 122. (See suggested registration program.) A Master of Science degree is offered in this field. For further information see page 59.

5. Principles of Nutrition. This course includes a study of the relation of food to physical fitness, and the practical application of such information to the college student. Open to men and women. Five credits. Fall, Winter, Daily 9. Spring, Daily 8. *Staff*

9. Meal Preparation and Serving. A study of the methods of preparing and serving simple meals. Open to all women and men students of the college. Three credits. Fall, F. 2; Lab. M. W. 2-5. Winter, W. 1; Lab., T. Th. 2-5. *Bahlert*

20. Food Selection and Preparation. Discussion and laboratory courses dealing with the study of food composition, scientific methods of preparation and food buying problems. Prerequisite, Inorganic Chemistry—limited to vocational Home Economics students and Foods majors. Four credits. Fall, T. Th. 1-4; Winter, T. Th. 8, M. W. 10-12. *Page*

21. Food Selection and Preparation. This course is a continuation of Foods 20. Emphasis is placed on meat and vegetable cookery, and attention is given to special food purchasing problems. Four credits. Winter, M. W. 2-4, T. Th. 2. Spring, T. Th. 1-4. *Page*

35. Nutrition and Growth of Children. A study of the physical development and nutritional requirements of all age levels. Prerequisite, Nutrition 5. Three credits. Winter, M. W. F. 11. Spring, M. W. F. 1. *Clayton*

105. Food Preservation. Approved methods of food preservation and the equipment best suited to different kinds of food processing. Prerequisites, Microbiology of Foods, Foods 20 and 21. All Junior and Senior Foods majors required to enroll during school year 1942-43. Given alternate years. Two credits. Fall, two 3 hour laboratories. T. Th. 9-12. *Bahlert*

106. Meals for the Family. This course includes the planning, preparation and serving of meals for the family with consideration given to the nutritional adequacy of the meals at different levels of income. Prerequisite, Foods 20 and 21. Three credits. Fall, Winter, Spring, M. F. 11-1, W. 12. *Page*

107. Experimental Cookery. Development of experimental methods: their application to investigations in cookery; acquaintance with the literature in the field; preparation of the student for independent investigations in foods. Prerequisites: Chemistry 5 (or equivalent), Foods 20, 21. Given alternate years. (Not given 1942-43.) Two credits. Fall. Two 3-hour laboratories. *Bahlert*

141. Advanced Nutrition. A review of the fundamentals of Biochemistry most closely related to the nutrition of man. Prerequisites, Nutrition 5 and Biochemistry or its equivalent. Four credits. Fall, M. W. F. 11; Lab., T. Th. 1-3. *Nutter*

142. Dietetics. A review of the fundamentals of chemistry and biology as applied to human nutrition with practice in the calculation of dietaries in health and in disease. Required of all vocational Home Economics students. Prerequisites, Nutrition 5 and Organic Chemistry. Five credits. Fall and Spring, M. T. W. Th. 9; Lab., F. 9-11. *Clayton*

143. Survey of Dietaries. A study of the dietary practices of people at various occupational levels in the United States and a survey of foreign diets. Consideration will be given to diet in disease. Prerequisite, Nutrition 141. Four credits. Winter, M. W. F. 10, Lab., Th. 10-12. *Clayton*

160. Special Problems. Open to qualified students majoring in Foods and Nutrition upon consultation with instructors. Any quarter. Time and credit arranged. *Staff*

180. Quantity Food Preparation. Principles of cooking applied to large quantity preparation and service. Includes a study of the standardization of foods with reference to quality and production cost. Some emphasis is given to the use and operation of kitchen equipment. Cafeteria kitchen used as the laboratory and students will assist in preparing foods for both the dormitory and the cafeteria groups. Field trips included. Prerequisites, Nutrition 5 and Foods 20 and 21. Three credits. Fall, M. W. F. 11; Lab., T. or Th. 9-12. *Vermillion*

181. Institutional Management. Continuation of 180 with emphasis on meal planning for dormitory and cafeteria. Planned for students who expect to be dietitians in hospitals or other institutions or who plan to manage a school cafeteria or a school lunch. Prerequisites, Nutrition 5, Foods 20, and 21, Quantity Food Preparation 180. Three credits. Winter, M. W. 10; Lab., T. or Th. 3-6. *Vermillion*

182. Institution Organization and Management. A study of the principles and methods of organization in cafeteria, dormitory, or hospital. Includes study of problems of administration such as employer-employee relationships, upkeep and equipment, keeping of simple accounts and inventories, and a few of the buying problems. Prerequisites, 180 and 181. Three credits. Spring, M. W. F. 10. *Vermillion*

190. Readings in Nutrition. Analysis and discussion of current literature in Nutrition. Two credits. Winter, T. Th. 1. *Nutter*

191. Seminar. Digest of recent literature on relationships of diet to diseases. Two credits. Spring, T. Th. 1. *Nutter*

201. Laboratory Methods in Foods and Nutrition. Emphasis on nitrogen, calcium and phosphorus determination. Prerequisites, Foods 141, Quantitative and Qaulitative Chemistry. Three credits. Winter. Time arranged. *Nutter*

202. Biological Assay of Foods. Prerequisite, Foods 141, Chemistry 102 or permission of instructor. Three credits. Fall, Winter and Spring. Time arranged. *Nutter*

203. Metabolism Studies. Prerequisite, Foods 141. Three credits. Fall, Winter and Spring. Time arranged. *Nutter*

210. Research. Nutrition and Foods. Individual research problems which may form the basis for the thesis submitted for the Master's degree. Any quarter. Time and credit arranged. *Staff*

291. Seminar. Prerequisite, senior or graduate standing. Two credits. Time arranged. *Nutter*

SUGGESTED REGISTRATION FOR FOODS MAJORS
*HOSPITAL DIETETICS PLUS SCHOOL ADMINISTRATION

Including A. D. A. Reqts.

Freshman Year

Fall		Winter		Spring	
Physiology	5	Bacteriology	5	Psychology	5
Nutrition	5	Economics	5	Sociology	5
Survey in H. E.	1	**Foods 9	3	Physics	5
Literature	5	P. E.	1	P. E.	1
P. E.	1	Consumer Ed.	3		
	17		17		16

Sophomore Year

Chemistry 3	5	Chemistry 4	5	Chemistry 5	5
Sophomore Comp.	5	Foods 21	4	Nutrition 35	3
Foods 20	4	Art 1 or 3	3	Speech	5
Music Apprec.	2	P. E.	1	P. E.	1
P. E.	1	Child Guid. 60	5	Microbiology of Foods	3
	17		18		17

Junior Year

Organic Chem. 121	5	Organic Chem. 122	5	Biochem. 111	5
Foods 105	2	Ad. Comp. 110	4	Biochem. Lab.	2
Psych. 102	5	Accounting 100	3	H. A. 149	3
Clothing	3	Foods 106	3	Textiles 20	4
Elective	2	Ed. 120	2	Elective	3
	17		17		17

Senior Year

Advanced Nutr. 141	4	Survey of Dietaries 143	4	Seminar 191	2
**Quantity Food 180	3	**Inst. Mgt. 181	3	**Inst. Mgt. 182	3
Electives	9	Read'gs in Nutr. 190	2	Electives	11
	16	Electives	7		16
			16		

GENERAL HOME ECONOMICS

10. Survey in Home Economics. Deals with the orientation of the student into Home Economics and her guidance in the choice of a vocation related to this field. Required of freshman and transferred students. Open to all college women. One credit. Fall, T. or W. 1. *Clayton*

25. Home Hygiene and 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 material and writing of special reports required. Laboratory apron needed. See instructor. Class limited to 22. Two credits. Fall, T. 1; Lab., T. 3-5. Winter, T. 1 for both section 1 and 2; Lab., Sec. 1, T. 3-5; Lab., Sec. 2, Th. 3-5. Spring, T. 1 for both Sec. 1 and 2; Lab., Sec. 1, T. 3-5; Lab., Sec. 2, Th. 3-5. *Burns*

*This program may be adjusted to meet the needs of students preparing for research or for the teaching profession.

**Consult advisor before registering for this course.

50. Consumer Education. The consumer's position in the present day market; the relation of the government to her problems; nongovernmental agencies for her guidance; protection through legislation; factors influencing consumer demand; standardization and informative labeling; advertising analysis; advantages offered consumer by different types of stores and markets; installment buying and consumer credit; how consumers may influence and be influenced by marketing policies, costs and trends. Prerequisite, Economics 51. Three credits. Fall, M. W. F. 8. Spring, M. W. F. 8. *Page*

65. Housing Problems. A social and economic study of the types, organization, plan and equipment of modern housing and the changes brought about by inventions, scientific discoveries, educational progress and other leading developments. Consideration of present housing needs, practices effecting housing construction and home ownership. Three credits. Fall, M. W. F. 11. Spring, M. W. F. 11. *Bahlert*

Methods in Teaching Home Economics. (See Education 120.)

Problems in Teaching Home Economics. (See Education 121.)

Practice Teaching in Home Economics. (See Education 122.)

Interior Decoration. (See Art 123.)

149. Economics of Household Consumption and Production. An economic analysis of household production and of the source and distribution of family income under different conditions. Special problems include the practice in planning budgets for specific families and laboratory work in the scientific consideration of household standards and organization. Required of all students before residence in the Home Management House. Prerequisites, Foods 20, 21, and 106 for all Vocational Home Economics students; others, Foods 9 and 106. Three credits. Winter, M. W. 11; Lab., Th. or F. 11-1. Spring, T. Th. 9; Lab., Th. 10-12. *Bahlert*

150. Residence in the Home Management House. A half quarter residence in the Home Management House affording senior college and graduate women an opportunity to apply principles of scientific and practical management to actual home problems. Prerequisite: Home Economics 149 or concurrent registration. Three credits. Any quarter. Time arranged. *Bahlert*

Textiles and Clothing

BERTHA F. JOHNSON, *Associate Professor;* LOIS HOLDERBAUM*, *Assistant Professor;* SUSIE SANFORD, *Assistant Professor in Extension;* MARGARET OLSEN, *Instructor.*

Students who elect Textiles and Clothing as their major are required to complete the following courses: Textiles and Clothing 9, 20, 25, 105, 125, 140, 150, 165, 168, and 170, 175, and 180, also Art 1, 2, 3, 32, 123, and a craft class are required. Textiles and Clothing majors may elect to minor in Merchandising, Business, Foods and Nutrition, Child Development, Art, Social Sciences, Physical Education, English, etc.

Textiles and Clothing majors to be graduated from the School of Home Economics must have 15 hours of Home Economics besides the major, which should include representative subjects in Foods and Nutrition, Child Development and Household Management. Those wishing to minor in Textiles and Clothing consult with the department head to determine required courses.

5. Dress and Personality. Open to all College girls desiring assistance in planning and selecting campus clothes to suit personality and income. No construction. Two credits. Spring, M. W. 1. *Johnson*

9. Clothing for the College Girl. Course designed to assist the college girl in selecting and adapting her clothes in terms of campus activities and personal

*On leave.

expressiveness. Construction of one new garment. Open to all college girls. No prerequisite. Three credits. Fall, Sec. 1, T. Th. 2-5; Sec. 2, M. W. 2-5. Winter, Sec. 1, M. W. 2-5; Sec. 2, M. W. 10-12. Spring, Sec. 1, M. W. 2-5.
Olsen

15. Clothing Appreciation and Selection for Men. This course is organized to meet the needs of men from all schools of the college. Emphasis is placed on buying problems and the importance of choice and care in the life and appearance of men's wearing apparel. Consideration is given to the importance of dress in the business world and factors that should determine one's choice of clothing. Two credits. Winter, M. W. 1. *Olsen*

20. Household Textiles. A study of textile articles for household and personal use and the materials from which they are made. The aim of the course is to form a basis for the intelligent purchase and use of Textiles through a knowledge and understanding of the processes involved in their manufacture and an appreciation of how fiber content and construction affect the choice we make and the care we give to them. Prerequisite or parallel, Economics 51. Four credits. Fall, Sec. 1, M. W. F. 10; Lab., F. 11-1. Winter, Sec. 1, M. W. F. 10; Lab., F. 11-1. Spring, Sec. 1, M. W. F. 10; Lab., F. 11-1. *Olsen*

25. Clothing Selection and Construction. A study and practice of the techniques and skills suitable for making and fitting articles of wearing apparel. Two garments are constructed. Careful consideration is given to the choice of color, design, and material. Methods of pattern alteration to suit individual figures and principles used in designing simple patterns are given some attention. Prerequisites: Clothing 9, 20, and prerequisite or parallel, Art 1, and 2. Lectures and laboratory work 3 credits. Fall, Sec. 1, M. W. 2-5. Spring, Sec. 1, T. Th. 2-5. *Olsen*

30. Millinery. Special study of individual problems in selection of hats; renovation and blocking felt and straw hats; construction of fabric hats. Application of principles of good design. Prerequisite or parallel courses, Art 1, 2. Clothing 9, 25, or their equivalent. Two credits. Spring, W. F. 10-12.
Staff

55. Fundamentals of Family Clothing. A survey of family clothing problems with special study and construction children's clothing from standpoint of aesthetic physiological and psychological development of children of different age levels. Prerequisite, Clothing 9. Three credits. Spring, T. Th. 2-5.
Johnson

105. History of Costume. A survey of ancient Egyptian, Grecian, Roman, early and modern French costume. It aims to give practical information for the use of students and teachers of Clothing and Costume Design and Physical Education majors. Three credits. Fall, M. W. F. 9. *Staff*

115. Costume Design. Experience in designing dress for the individual creatively from abstract source material using the sketch method. Application of design principles is made to media related to home living such as still life compositions and flower arrangements. Prerequisites, Art 1, 2, and Textiles and Clothing 9, 20, and 25. Three credits. Fall, Sec. 1, T. Th. 9-12. Spring, Sec. 1, T. Th. 9-12. *Johnson*

125. Applied Costume Design. Creative experience in dress designing by draping on the dress form. Understanding of the influence of grain, textures, and design in fabric, on design in dress emphasized. Problems consist of making a French lining and draping two garments. Prerequisites, Clothing 9, 25, and 115. Three credits. Winter, Sec. 1, T. Th. 9-12. *Johnson*

140. Decorative Textiles. A study of Historic Textiles from early times down to the present as a background for decoration of fabrics. Laboratory work will consist of weaving, needlecraft and various means of developing design for garments and household furnishing. Prerequisites, Art 1, 2, 3, and Textiles and Clothing to satisfy the instructor. Three credits. (Not given 1942-43.)

150. Home Furnishings. In this course a study is made of points to consider when purchasing furniture, rugs, carpets, draperies, upholstery fabrics, china, linen, glass, and silver for the home.

Low cost budgets for a young married couple are planned. Good buymanship is stressed. The laboratory work consists of methods of making the home attractive at small cost. This includes remodeling furniture, draperies, pictures and other accessories. Three credits. Fall, T. Th. 1-4. Winter, T. Th. 1-4. *Staff*

165. Advanced Clothing Problems. Special application of principles of design and construction in tailored garments. Lectures, demonstration and reports. Prerequisites Textiles and Clothing 9, 20, 25, 115. Three credits. Fall, Sec. 1, T. Th. 9-12. Winter, Sec. 1, T. Th. 2-5. *Olsen*

168. Advanced Textiles. This course includes a study of laces, tapestries, fur, leather, rugs and handwoven textiles. Two credits. (Not given 1942-43.)

170. Flat Pattern Designing. The basic principles which underlie the form, design and construction of patterns for various figures. Includes drafting a basic pattern and provides opportunity for further study in fitting, analysis, alteration and comparison of patterns and in pattern design. Prerequisites, Clothing 9, 25, and 115. Three credits. Spring, Sec. 1, T. Th. 9-12. *Olsen*

175. Textile Chemistry. A study of the physical and chemical properties of the textile fibers, laboratory and household tests used in their identification, and the application of these factors to the choice and care of fabrics. Consideration is given to physical testing of materials as an aid to recognition of quality, cleansing agents are analyzed and their use evaluated. Prerequisite, Tex. 20, Inorganic and Organic Chemistry. See Instructor. Three credits. (Not given 1942-43.) *Staff*

180. Family Clothing Problems. Study of problems connected with family clothing, including clothing budgets, clothing reclamation and children's clothes. Remodeling and renovation of demoded garments with emphasis upon applicable techniques and good design. Study of the selection and construction of clothing for children of all ages from the standpoint of child's development and cost. Prerequisites, Textiles and Clothing 9, 25, 20, 115, 125 or 165. Art 1 and 2. Five credits. Winter, Sec. 1, M. W. 2-5, F. 2. Spring, Sec. 1, M. W. 2-5, F. 2. *Johnson*

190. Special Problems. Independent study under the direction of a faculty member of a special problem in textiles or clothing in which a student has interest, or needs further work to meet requirements. Open to qualified students upon consultation of instructor. Time and credit arranged. *Johnson*

SUGGESTED REGISTRATION FOR A MAJOR IN TEXTILES AND CLOTHING

1942-43

Freshman Year

Fall		Winter		Spring	
Art 1	3	Art 2	3	Art 3	3
Clo. Col. Girl 9	3	Physiology 4	5	Psychology 3	5
Home Ec. Survey	1	Orientation	½	Economics 51	5
Biol. Science	5	Phys. Edu.	1	Phys. Edu.	1
Phys. Edu.	1	Elective	7	Orientation	½
Orientation	½		16½	Elective	2
Elective	3				16½
	16½				

Sophomore Year

Exact Science	5	Exact Science	5	Exact Science or Social Science	5
House Tex. 20	4	Soc. 70 or 10	5	Soph. Comp. 10	5
Art 17	3	Clothing 25	3	Crafts	3
Phys. Edu.	1	Literature	3	Home Ec. 50	3
Elective	3	Phys. Edu.	1	Phys. Edu.	1
	16		17		17

Junior Year

Hist of Costume	3	Cost. Design 115	3	App. Cost. Design	3
Adv. Text 168	2	Advan. Comp. 110	4	Interior Dec. 123	5
History	5	Decorative Textiles	3	Literature	5
Elective	6	Elective	6	Elective	3
	16		16		16

Senior Year

Clothing 165	3	Clothing 170	3	Family Clo. 180	5
Pub. Health 108	5	Chem. of Tex. 175	3	Land. Gardening	3
Home Furn. 150	3	Elective	10	Pol. Science	3
Elective	5			Elective	5
	16		16		16

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

COLONEL MATTHEW A. CROSS, C.A.C., *Commandant*

Basic Courses 259

R. O. T. C. Band Courses 260

Advanced Courses 260

General Information

COLONEL MATTHEW A. CROSS, C.A.C., *Commandant*, P.M.S. and T.; LIEUTENANT COLONEL BEN B. BLAIR, C.A.C.; CAPTAIN ELDON M. STOCK, C.A.C., *Associate* P.M.S. and T.; CAPTAIN RALPH P. WARD, C.A.C.; FIRST LIEUTENANT PHILLIP A. BULLEN, C.A.C.; FIRST LIEUTENANT JOSEPH R. SMITH; FIRST LIEUTENANT PAUL E. GRACE, *Assistant* P.M.S. and T.; STAFF SERGEANT ANDREW DALY, D.E.M.L.; SERGEANT CHARLES A. MOORE, D.E.M.L.; SERGEANT CHARLES J. CASAZZA, D.E.M.L.; SERGEANT WELLWOOD E. SEE, D.E.M.L.; *Instructors*.

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. The obligations to provide military instruction on land-grant institutions by the Act of July 2, 1862, are not altered by the National Defense Act as amended November 1, by Army Regulations.

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.

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 Reserved 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.

Military Science Regulations

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 (9 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 rest entirely with the student.

No male student will be excused from the requirements in Military Science except for the following reasons:

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

b. Students over twenty-five years of age at the time of original entrance into the College will be excused from Military Science.

c. 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.

d. 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 or Marine Corps Reserves will not be permitted to enroll in the Reserve Officers' Training Corps.

e. Students who have completed two or three years junior R. O. T. C. in good standing may be given appropriate exemptions.

f. Special students below college grade are 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 at the time of registration. Pending the action of the 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 $1.00 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.

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 year of Military Science. Entrance upon the advanced course is elective, but once entered upon, the course becomes a prerequisite for graduation, unless the student shall be honorably discharged in accordance with the provisions of Army Regulation 145-10.

Students electing Military Science as a major subject should do so at the beginning of the freshman year in order that sufficient time may be available to complete the Advanced Course. The School of Arts and Sciences offer a major* in Military Science.

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 black shoes before entering the College, as they will be required immediately upon his admission.

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*A Department Major in the School of Arts and Sciences is offered in Military Science and Tactics. Prescribed requirements are: M. S. & T., 36 Hours; Mathematics 34 - 35 - 46 - 97 - 98 - 99, min. 30 hours; French, German or Spanish, 30 hours; Surveying 81 - 82 & 83, 8 hours; Chemistry 10 - 11 & 12, 15 hours; Physics 20 - 21 & 22, 15 hours; Political Science 10 and 102, 8 hours.

The uniform and equipment issued for the use of a 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 diligenty 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 six 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.

(4) To enlist in the Enlisted Reserve Corps, U. S. Army, for a period of three (3) years unless sooner discharged by proper authority.

d. The students must be registered in one of the Schools of the College while pursuing the advanced course.

e. The student must have completed Math. 34-35 and 46 or equivalent.

Each student enrolled in the advanced course will be paid commutation of subsistence at the rate of twenty-five 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.

Each absence without leave from enrollment to graduation will cause deductions of two days commutations.

*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.

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*Summer camp has been suspended by War Department orders for the duration of the war and for six months thereafter.

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 sixty (60) 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 and one-half credit hours per quarter, which may be included in the 186 credit hours required for graduation.

Students who satisfactorily complete the advanced course receive five credit hours per quarter, which count toward the 186 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 Sciences, 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 and one-half credits. *Staff*

Instruction during this period will include infantry and artillery drill; ceremonies; rifle marksmanship; Coast Artillery instruction. T. 8, 9, 10 or 11; W. 8, 10 or 11; Th. 8, 9, 10 or 11; Lab., T. Th. 8 and 1. *Staff*

2. Military Science. First year. Winter quarter. Three hours per week. One and one-half credits.

Instruction during this period will include infantry and artillery drill; Coast Artillery instruction. T. 8, 9, 10 or 11; W. 8, 10 or 11; Th. 8, 9, 10 or 11; Lab., M. T. W. Th. 12-2 or 1-3; T. Th. 8. *Staff*

3. Military Science. First year. Spring quarter. Three hours per week. One and one-half credits.

Instruction during this period will include infantry and artillery drill; ceremonies, inspection, Coast Artillery instruction. T. 8, 9, 10 or 11; W. 8, 10 or 11; Th. 8, 9, 10 or 11; Lab., T. Th. 8 and 1. *Staff*

4. Military Science. Second year. Fall quarter. Three hours per week. One and one-half credits.

Instruction during this period will include drill and command (infantry and artillery); ceremonies, Coast Artillery instruction (first class subjects). T. 8, 9, 10 or 11; Th. 8, 9, 10 or 11; F. 10; Lab., T. Th. 8 and 1. *Staff*

5. Military Science. Second year. Winter quarter. Three hours per week. One and one-half credits.

Instruction during this period will include drill and command (infantry and artillery); Coast Artillery instruction (first class subjects). T. 8, 9, 10 or 11; Th. 8, 9, or 10; F. 10; Lab., M. T. W. Th. 12-2 or 1-3; T. and Th. 8. *Staff*

6. Military Science. Second year. Spring quarter. Three hours per week. One and one-half credits.

Instruction during this period will include drill and command (infantry and artillery), ceremonies, inspections, Coast Artillery instruction (first class subjects). T. 8, 9, 10 or 11; Th. 8, 9, 10 or 11; F. 10; Lab., T. Th. 8 and 1. *Staff*

R. O. T. C. BAND COURSES

1B, 2B, 3B. R. O. T. C. Band. First year. One credit per quarter. T. Th. 12-2. *Staff*

4B, 5B, 6B. R. O. T. C. Band. Second year. One credit per quarter. T. Th. 12-2. *Staff*

ADVANCED COURSES

101. Military Science. First year. Fall quarter. Six hours per week. Five credits.

Instruction during this period will include elementary orientation, drill and command, drill regulations, and Coast Artillery instruction (expert subjects). Fall, M. W. F. 9, 10 or 11; Lab., T. 12-2; Th. 1. *Staff*

102. Military Science. First year. Winter quarter. Six hours per week. Five credits.

Instruction during this period will include drill and command, gunnery, Coast Artillery instruction (expert subjects). Winter, M. W. F. 9, 10 or 11; Lab., M. T. W. Th. 12-2, 1-3. *Staff*

103. Military Science. First year. Spring quarter. Six hours per week. Five credits.

Instruction during this period will include drill and command, anti-aircraft gunnery, conduct of fire, analysis of drill, and service practice. Spring. M. W. F. 9, 10 or 11; Lab., T. 12-2; Th. 1. *Staff*

104. Military Science. Second year. Fall quarter. Six hours per week. Five credits.

Instruction during this period will include drill and command, artillery material, military law, administration and supply. Fall, M. W. F. 9, 10 or 11; Lab., T. 12-2; Th. 1. *Staff*

105. Military Science. Second year. Winter quarter. Six hours per week. Five credits.

Instruction during this period will include drill and command, motor transportation, military history, artillery tactics. Winter, M. W. F. 9, 10 or 11; Lab., M. T. W. Th. 12-2, 1-3. *Staff*

106. Military Science. Second year. Six hours per week. Five credits.

Instruction during this period will include drill and command, field engineering, orientation. Spring, M. W. F. 9, 10 or 11; Lab., T. 12-2; Th. 1. *Staff*

Forty-ninth Annual Commencement

LIST OF GRADUATES—1941-42

Graduates with the Degree of Master of Education

IN AGRICULTURE
Ward, Edward Dee

IN HOME ECONOMICS
Cummings, Alice Bahen

IN PHYSICAL SCIENCES
Simpson, Charles O.

IN SOCIAL SCIENCES
Larsen, Walter C.
Van Shaar, Ben

Graduates with the Degree of Master of Science

SCHOOL OF AGRICULTURE
Clark, John W.
Holmgren, Arthur H.
Stowers, J. Raymond
Richards, Grant Stucki

SCHOOL OF ARTS AND SCIENCES
Dunn, J. Stanley
Hanson, Alvin Maddison
Martin, Robert William
Olsen, Justen Lamond
Rader, William E.

SCHOOL OF COMMERCE
Armstrong, George W.
Gancheff, David
Hyer, Edgar Andrew

SCHOOL OF EDUCATION
Monson, Franklin Dee
Tolman, Lloyd Willis

SCHOOL OF FORESTRY
Cook, Charles Wayne
Evans, Thomas B.
Madsen, Vaughn D.
McKean, William T.
Norris, Jonathan J.
Smith, Justin Gardner

SCHOOL OF HOME ECONOMICS
Watts, Faith Ella

Graduates with Certificates in Social Work

Geddes, Martha
Hulsa, Wilma Pearl
Jaggi, Walter G.
Reeder, Barbara Henderson
Scott, Woodrow Wilson
Thornton, Elva Ann

UNDERGRADUATE DIVISION

Graduates with the Degree of Bachelor of Science

SCHOOL OF AGRICULTURE

Abbott, Joseph T.
Anderson, Moyle W.
Anderson, Rulon A.
Anhder, Theron Boyd
Ashby, Garr Bennett
Avis, Samuel Lee
Axelgard, Chris T.
Bailey, John M.
Barton, John Owen
Black, Harold Reese
Black, Robert Maxwell
Boyer, Keith S.
Brinkerhoff, Alma Neilson
Broadbent, Emer E.
Brough, Lawrence Don
Brown, Thales C.
Burton, Albert W.
Callister, Orson P. Jr.
Chadwick, Ralph Joseph
Christensen, Anthon Bernon
Cowley, George Harold
Ferre, Alvin
Foote, Wilson Hoover
Frischknecht, Wilford Dean
Gibson, Lee Willis
Harline, Alden Kay
Hatch, Knolyn LaMar
Henry, Charles Howard
Hicken, Russell B.
Jex, Leo William
Johnson, Ronald Charles
Jones, Jack Robert
Kidman, Don Carlos
Knaphus, Loyd Marten
Larsen, Joseph Norris
LoVerme, Dominick Michael
Magelby, Reed William
Mohlman, Farrel Jay
Mohlman, Frank R.
Neilson, Lee V.
Nelson, Glen T.
Nielsen, Don Lamb
Olsen, Lee E.
Olsen, Lloyd Vern
Parker, Lynn S.
Poulsen, Paul F.
Quayle, Joseph Robert
Rich, Grant Stucki
Rosenberg, Ephraim
Thatcher, Ray Alden
Thomas, Ross Gaither
Thorson, Alfred G.
Tobler, Merl Leon
Vanderbeek, James Lawrence
Warnick, Alvin Cropper
Whitesides, Dee
Williams, Elden H.
Wilson, Wayne Powell
Young, Dale W.

SCHOOL OF ARTS AND SCIENCES

Archibald, Elmer Hendry
Ashdown, Donald
Bailey, Sam H.
Ballard, Rene Noble
Behling, Glen J.
Bills, Ora Madeleine
Bradshaw, Carl Barnes
Burgoyne, Robert Hyrum
Caldwell, Warren T.
Canning, Ray Russell
Cartwright, Neil Burke
Christensen, Mary Jean
Collings, Wayne Rich
Coop, June
Crook, Edward
DeLong, Aileen
Dixon, Dwight R.
Ericksen, Edna Margaret
Farnsworth, Grace B.
Farr, Catherine
Fronk, William Don
Gardner, Ellen
Gates, Lawrence Keith
Gay, Don W.
Hickman, Ineda
Hollist, Lynn O.
Hudman, Helen Jane
Hurst, Clyde F.
Hyde, Darrell
Jensen, Howard B.
Johnson, Fay Hatch
Johnson, Florence Genevieve
Jones, Ray L.
Lattin, Richard S.
Leigh, Anna
Lyman, Lillian
Mackay, LaMar Seal
Madsen, Chesley Mads
Manning, Melvin LeRoy
McMurrin, James Allen
Palmer, Gerald Morris
Parry, Mildred
Passey, Doris Ann
Pedersen, Betty Holland
Pedersen, Ruth L.
Peterson, Elmer George Jr.
Phillips, Harold W.
Priday, Sidney M.
Prows, Merrill Seymour
Randall, Alaine
Rasmussen, Milton J.
Rigby, Dean C.
Roberts, Reed Stewart
Robinson, Clay M.
Robinson, Joseph Lewis
Rogers, Dean J.
Rowe, Jean
Salisbury, Doretta Lillian
Shaw, John Austin
Smith, Annabelle
Smith, William Rondo
Sorensen, Earl Franklin
Turnbull, Betty
Van Epps, Gordon Almon
Wadsworth, Max E.
Walker, Rex Basil
Wendel, Arthur Frank
Wennergren, Theodore M.
Westfall, Franklin Oliver
Wilcox, Marian Julie
Wright, John Kurt
Young, Donald Reeder
Zirker, Robert Arther

SCHOOL OF COMMERCE

Allred, Chall E.
Allred, Elda I.
Andersen, Lee Roy
Anderson, Mae
Bacon, David Clarence
Bowden, Barton Ried
Briggs, Melvin T.
Bybee, Frank Arthur Jr.
Capener, Harold R.
Clay, Carol Wennergren
Clay, John E.
Crane, Anna
Crockett, Marian Larsen
Crookston, Jennet Spencer
Fonnesbeck, Alan
Freeman, Dean Bert
Fuller, Glen Eugene
Geddes, Ezra Woolley
Grandy, Grant P.
Grandy, Leone
Guymon, Maurine Burnham

Guymon, Rodney Del
Harris, Richard H.
Hendricks, E. LaVan
Homer, Karl T.
Hulme, David K.
Jenkins, Charles Jr.
Jennings, William Lewis
Jensen, Evart James
Jones, Ray A.
Kunz, Louise
Larson, Olga Evelyn
Lundstrom, Helen
Luthy, Kay
Miller, Joseph Marvin
Monson, Bertha
Neilson, Alfred John
Nelson,Elaine
Newby, A. J.
Nielsen, Martha
Norton, William F.
Pace, Guy Grigg
Paulos, A. James
Perry, Wilmer J.
Peterson, Sterling K.
Preston, Barbara Ann
Prince, Florence
Romney, Richard Horlick
Scott, Roy H.
Shaw, Lloyd E.
Steed, Harold C.
Stephens, Kenneth Dean
Tarbet, Clyde Theurer
Thornton, Elva Ann
Wangsgaard, Reid E.
Watterson, Alma Eugene Jr.
Wecker, Jack
Wintch, Helen Evelynne

SCHOOL OF EDUCATION

Adamson, Ella LaVere
Anderson, Chad Kay
Andrus, Ruth
Baker, Kenneth Fay
Baugh, Evan A.
Bell, Marvin T.
Bertin, James Conrad
Brown, Harold D.
Budge, Wallace R.
Buist, Fern
Buttars, Suse
Campbell, Chloe Denee
Campbell, Lucile
Cannegieter, Morris W.
Carver, Don Carlos
Carver, Marjorie L.
Chadwick, Rae
Christensen, James Wesley
Clark, David Thomas
Clayton, Genevieve S.
Condie, Darlene
Covey, Loyal
Cutler, H. Max
Dillman, Naomi Eugene
Drakulich, Nick Joe
Durrant, William M.
Evans, Earl Dean
Fernelius, Jean Wheelwright
Fishburn, Noble Wight
Hall, Dean Glazier
Hall, Norma
Hanson, Golden Kimball
Hutchison, Charles Warner
Hutchison, Martha Jean
Jackson, Glen Reed
Jewkes, Alma Hue
Jones, Donald LeRoy
Jones, Evelyn T.
Larison, Dorothy J.
Leavitt, Charles Perry
Lindsay, Walter West
Maughan, Glen L.
Maughan, Murray L.
Merrill, Samuel Wood
Miles, Helen
Mockli, Frank
Munns, Reed A.
Murphy, Bonnie Ruth
Nelson, Dale Orville
Nelson, Shirley Ann
Nielson, Charles William
Owens, Hazel
Pack, Bonna Lue Daniels
Peck, Jane
Potter, Margaret
Prestgard, Arnold Leroy
Randall, Alice
Rawlins, Berness
Rawlins, Frances
Roberts, Thomas D.
Sagers, Wilford W.
Schiess, Connie B.
Sjoberg, Narwin L.
Smith, Carl Laurenson
Smith, Wells C.
Sommers, Elmer
Sorenson, William Charles
Stanger, George H.
Steen, Charles Joseph
Stone, Joseph Howard
Taylor, Arthur Carbine
Taylor, Jennie M.
Taylor, Wheatly John
Turner, Charlene Louise
Tyson, Ruth
Walters, Barbara M.
Webb, Raymond Henderson
Welker, Joyce
Wiggins, Kathryn C.
Wilkinson, Sibyl
Willmore, Joseph Ivan
Winn, Elva
Wooley, Mary

SCHOOL OF ENGINEERING, INDUSTRIES AND TRADES

Civil Engineering

Budge, Khalil McKay
Budge, Thomas Morgan
Christiansen, Lyman Marion
Clyde, Ned Packard
Collard, Harold Eugene
Cottle, J. Russell
Dalley, Parley James
Heaton, Norman I.
Hugie, Ray C.
Johnson, Preston D.
Maughan, Willard K.
Morgan, Wayne Rich
Ogden, William
Olsen, Newell Preston
Parsons, Frank
Petersen, Mervin S.
Rose, Willard C.
Scartezina, Edward L.
Stock, Clifford D.
Wilson, Robert Folsom

Agricultural Engineering

Daines, Spencer Hansen
Kennedy, Paul J.
Ludlow, Lynn Stewart
Maxwell, Art Vernon

Industrial Arts

Allen, Reed Russell
Banks, Llewellyn A.
Hiatt, Jex Leon
Kennington, Emerson H.
Miller, Dale Roland
Ogden, A. McKay
Smith, Zenas
White, Floyd Stoker

Radio Technology

Henderson, Royal Bartlett
Olsen, Newell Peter
Richards, Denton Stanford
Secrist, Carroll R.
Van Orden, J. Dee

SCHOOL OF FORESTRY

Barnum, Warren P.
Bergen, Luther
Bush, Roche D.
Corey, Robert Earl
Cox, Elmer C.
Dedrickson, Lorin Ross
Gatherum, James M.
Gooding, Earl R.
Hall, Mervin
Hampton, Kenneth Ray
Hampton, Rex H.
Killough, John R.
Larson, Willard Reed
Latimer, David Archie Jr.
Liston, Russel
Luscher, Arthur A.
Major, Jack
Mathews, William Lewis
Maw, Edward C.
McConnell, Charles B.
Merrill, Leo Brown
Nemanic, Joseph J.
Pozarnsky, Thomas H.
Reed, James Clare
Rouse, Burt Frank
Rozynek, William S.
Stevens, Elwin Wright
Stevens, Ward Earl

SCHOOL OF HOME ECONOMICS

Anderson, Marjorie
Ballard, Mary Donna
Beal, Dorothy
Black, Helen
Carter, Joan
Christensen, Ann Adele
Cook, Maurine
Cordon, Barbara
Cordon, Julette
Cox, Pauline Schmutz
Crawford, Faye Carol
Croft, Carmen
Cutler, Mae
Doran, Belva H.
Eaton, Marian Rebecca
Fishburn, Enid
Fowler, Ettamarie
Gardner, Phyllis
Hartvigsen, Laurel Stowell
Hatch, Mary
Herbert, Madonna
Hermansen, Lula Beth
Huff, Virginia Lowe
Hughes, Doris Naomi
James, H. Deon
Jensen, Marjorie Edith
Johnson, Frances
Johnson, JoBeth
Killpack, Ruby
Klingler, Cara Genevieve
Larsson, Ruth Mary
Nielsen, Margaret Charlotte
Olson, Irene
Parkin, Glenna Marie
Parks, Harriet
Parks, Hazel
Paulson, Marjorie
Perkins, Betty
Perry, Hazel
Peterson, Dorothy Gene
Petersen, Lois JaVan
Peterson, Marna Marie
Pixton, Lucile Marie
Rasmussen, Katherine
Rees, Anna Lou
Richards, Ruby Berniece
Roberts, Roberta Fay
Sandberg, Elaine
Scott, Rae
Shumway, Sybil
Smith, Mary Langton
Stephens, Margery
Stone, Elizabeth Jeanne
Stratford, Lora
Sweeney, Mary Elizabeth
Sycamore, Ruth
Thorell, Cora Mickelson
Tracy, June
Wallin, Doris Emma
Ward, Norma A.
Welling, Beth
Wetzler, Dee Louise Parker

OFFICERS' RESERVE CORPS OF THE ARMY OF THE UNITED STATES

Second Lieutenants, Officers' Reserve Corps, Coast Artillery

Abbott, Joseph T.
Avis, Samuel Lee
Axelgard, Chris T.
Baugh, Evan A.
Boyer, Keith S.
Canning, Ray Russell
Capener, Harold R.
Clark, David Thomas
Clyde, Ned Packard
Corey, Robert Earl
Cox, Elmer C.
Freeman, Dean Bert
Geddes, Ezra Woolley
Hall, Mervin
Hampton, Kenneth Ray
Hampton, Rex H.
Henderson, Royal Bartlett
Hollist, Lynn O.
Hugie, Ray C.
Hulme, David K.
Hurst, Clyde F.
Jex, Leo William
Johnson, Preston D.
Johnson, Ronald Charles
Kidman, Don Carlos
Lattin, Richard S.
Liston, Russel
LoVerme, Dominick Michael
Manning, Melvin LeRoy
Maughan, Glen L.
Millard, John Burton

Miller, Dale Roland
Mitchell, Albert W. Jr.
Nelson, Glen T.
Pace, Guy Grigg
Peterson, Sterling K.
Richards, Denton Stanford
Rogers, Dean J.
Romney, Richard Horlick
Scartezina, Edward S.
Shaw, John Austin
Steed, Harold C.
Stock, Clifford D.
Wilcox, G. Neil
Wilson, Robert Folsom

ENSIGNS, UNITED STATES NAVAL RESERVE

Collard, Harold Eugene
Dalley, Parley James
Morgan, Wayne Rich
Olsen, Newell Preston
Petersen, Mervin S.
Scott, Woodrow Wilson

GRADUATES WITH THE THREE-YEAR NORMAL DIPLOMA

Birch, Delores
Clayson, Melba
Critchlow, Melva Mae
Dalley, Rachel
Davis, Estella
Ericksen, Alberta
Esplin, Dorothy
Evans, Mary Elizabeth
Freeman, Irene
Hansen, Beatrice Edna
Hillier, Afton Annie
Jensen, Norma Ellen
Jensen, Ruth
Martin, Melba Virginia
Maughan, Flora June
Nelson, Ethel
Parrish, Josephine
Perry, Eleanor Mae
Russell, Mary Ellen
Stephens, Ila Beesley
Tingey, Margaret Elaine

GRADUATES WITH THE SPECIAL TWO-YEAR CERTIFICATE OF COMPLETION

Home Economics

Avis, Dawna Wheeler

Industries and Trades

Bair, Glen
Campbell, Arthur Adelbert
Carey, Glen Albert
Christensen, Cecil Nephi
Divine, Emmett
Erickson, Robert M.
Gowers, Don Ray
Griffiths, Daniel J.
Hayden, Ben Lynn
Hiatt, Ray
Richards, Myron M.
Webber, Milton A.

HONORS 1941-42

Phi Kappa Phi

SCHOOL OF AGRICULTURE

John M. Bailey
Emer E. Broadbent
Glen T. Nelson
Lynn Parker
Ray Alden Thatcher
Alvin Cropper Warnick

SCHOOL OF ARTS AND SCIENCES

Elmer Archibald
Glen J. Behling
Robert H. Burgoyne
Dwight R. Dixon
Ineda Hickman
Arthur Frank Wendel

SCHOOL OF COMMERCE

Alan Fonnesbeck
Grant P. Grandy
Helen Lundstrom
Elaine Nelson
Roy H. Scott
Clyde Tarbet

SCHOOL OF EDUCATION

Ella LaVere Adamson
Genevieve S. Clayton
H. Max Cutler
Earl Dean Evans
Jane Peck
Wilford W. Sagers
Charles J. Steen
Barbara M. Walters

SCHOOL OF ENGINEERING

Art Vernon Maxwell
Newell Preston Olsen
Frank Parsons

SCHOOL OF FORESTRY

Robert Earl Corey | Kenneth Ray Hampton | Rex Hampton

SCHOOL OF HOME ECONOMICS

Faye Carol Crawford | Carmen Croft | Irene Olson
Carma Hunsaker Croft | Doris Naomi Hughes | Dee Louise P. Wetzler

SCHOLARSHIPS AND SPECIAL AWARDS

Scholarships "A's"—Dwight Dixon, Glenn E. Fuller, Grant R. Grandy, Doris Harwood, LaRee Kerr, Glen L. Nelson, K. Joy Nelson, Paul Thomas, Helen Irene Wadsworth.

Johansen Scholarships—Stanley P. Anderson, Gwen Hunsaker, Lane Palmer, Moses Samowitz, Raymond Shaw; Edith Ashby, Angelo Collis, Karma Hill Lacey, Alternates.

Class of 1927 Research Scholarships—Aaron Amacher, Alten Davis; Arthur Wallace, First Alternate; Ted B. Bernhisel, Second Alternate.

The Utah State Agricultural College Science Medal, given to the author of the best paper on some selected scientific subject—(not given 1942).

The Home Economics Awards, to outstanding seniors in Home Economics—Carmen Croft, Harriet Parks, Ruby Richards, Rae Scott.

The Phi Upsilon Omicron Scholorship—Betty Ann Eldredge.

The U. C. A. A. Medal, for outstanding Senior student in Accounting—Roy H. Scott.

Alpha Kappa Psi Fraternity Award, for outstanding male student in Commerce—Ellis Lamborn.

The Alpha Zeta Fraternity Plaque, given to the sophomore student in Agriculture who maintained the highest scholastic average in his freshman year—Lawrence Baker.

The Leadership Challenge Cup, given to the student of senior rank in Agriculture who has exhibited the greatest measure of constructive organization and leadership throughout his college course—Alvin C. Warnick.

The Danforth Summer Fellowship—Alvin C. Warnick.

The Rollo M. Rich Memorial Scholarship, an award made each year to a worthy student of senior college rank who is a member of both Delta Phi and the Ag. Club—Arthur Wallace.

The American Rambouillet Sheep Breeders Association Challenge Cup—Vern Hoffman.

The Ogden Union Stockyards Challenge Cup, given to the the student who ranks the highest in judging beef cattle—Allen Stratman.

The Salt Lake Union Stockyards Challenge Cup, given to the student who ranks the highest in judging swine—Fred Allen.

The Hawaiian Steamship Company's Challenge Cup, given to the student who ranks the highest in juding wool—Alvin C. Warnick.

The John K. Madsen Challenge Cup, given to the student who ranks the highest in judging sheep—James Huber.

The Myers Speech and Dramatics Award—Warren Caldwell.

The Sons of the American Revolution Award, given to the male student who gives the best prepared patriotic speech—Glenn E. Fuller.

The Lambda Rho Short Story Award—Lillian Lyman, Niels Nielsen.

The Chi Omega Sorority Scholarship—Aileen DeLong.

The Theta Chi Fraternity Award, for outstanding woman student in Secretarial Science—LaRee Kerr.

Delta Beta Chi Award, given to the freshman or sophomore chemistry student who writes the best paper on a subject in the field of chemistry—James A. Newby.

Empyrean Club Literary Award—Ann Louise Barber.

William Alger Award, for outstanding freshman pre-medical student—George William Haskins.

The Bear River Fire Insurance Company Awards, for the best essays written on Cooperative Fire Insurance—Glenn E. Fuller, Mary Walker, Wayne Wilson.

The Utah Taxpayers' Association Awards—George W. Armstrong, Edgar A. Hyer, Robert A. Nelson; Glenn E. Fuller, Alternate.

The College Awards, two certificates given for distinguished College Citizenship—Wayne Rich Morgan, Marjorie Paulson.

SUMMARY OF ATTENDANCE—1941-42

Rank	Agriculture		Forestry	Arts & Sciences		Commerce		Education		Engineering	Home Econ.		
	Men	Women	Men	Men	Women	Men	Women	Men	Women	Men	Men	Women	Total
Graduates	22	1	10	22	5	12	8	20	13	3	0	9	125
Seniors	75	0	34	47	27	48	17	36	47	44	0	69	444
Juniors	87	0	34	53	20	46	20	29	65	93	0	68	515
Sophomores	92	1	40	59	32	40	57	33	39	102	1	72	568
Freshmen	122	0	36	76	80	47	101	28	48	165	1	93	797
Total Collegiate	398	2	154	257	164	193	203	146	212	407	2	311	2449
Vocational	0	0	0	0	0	0	0	0	0	5	0	0	5
Totals	398	2	154	257	164	193	203	146	212	412	2	311	2454

(Men 1562—Women 892)

Summer Session and Intersession, 1941 (Men 467—Women 485) 952

Total Resident Enrollment 1941-42 (Men 2029—Women 1377) 3406

INDEX

	Page
Accounting	146
Administration	11
Administration and Supervision	179
Admission	49
Advanced Standing	50
Aeronautics	201
Agriculture	80
Agricultural Economics and Marketing	81, 142
Agricultural Engineering	198
Agricultural Experiment Station	44
Agriculture, Department of	80
Agriculture, School of	75
Agronomy and Soils	84
Alumni Association	37
Animal Husbandry	88
Art	171
Arts and Sciences, School of	103
Automotive	211
Awards and Honors	265
Awards and Scholarships	68, 266
Bachelor of Science Degree, requirements for	57
Bacteriology and Biochemistry	90, 106
Band, R. O. T. C.	260
Biochemistry	90, 106
Biology	92, 108
Branch Agricultural College	31, 49
Board of Trustees	11
Botany and Plant Pathology	92, 108
Buildings and Facilities	38
Building Construction	223
Business Administration	144, 147
Cafeteria	39
Calendar of Special Events	10
Campus Organizations	73
Class Standing	51
Chemistry	110
Child Development and Parental Education	244
Civil Engineering	201
Civilian Pilot Training Ground School	210
Clothing	250
College Assemblies (See Calendar of Special Events)	10
College Calendar	10
College Proper	49
Commencement, Forty-ninth Annual—1941-42	261
Commerce, School of	139
Committees, Standing, of the Faculty	21
Composition Requirements	53
Correspondence Study	48

Page
County Extension Agents 28
Credit by Examination 52
Crops 84
Dairy Husbandry and Manufacturing 94
Debating 73
Degrees, requirements for
Bachelor of Science 57
Master of Education 62
Master of Science 59
Dietetics 248
Divisions of College 44
Dramatic Arts 72
Economics 150
Education, School of 169
Education, Elementary 174
Education, Secondary 176
Elementary Training School Staff 20
Engineering Division 197
Engineering, Experiment Station 45
Engineering, School of 194
Engineering, Civil 201
English 113
English Placement Examination 53
Entomology 133
Entrance Examination for Vocational Students 50
Entrance Fees 65
Entrance Requirements (See Admission) 49
Excess Registration 51
Expenses of Students 65
Experiment Station Staff 23
Extension Service 27, 46
Faculty 13
Federal Collaborators 25
Fees, Special 66
Foods and Nutrition 247
Forest Management 232
Forestry, School of 229
Fraternities, Honorary and Social 73
French 123
Freshman Orientation 55
General Information 34
Geology 118
German 124
Government of the College 36
Graduates—1942 262
Graduate Division of Social Work 162
Graduate Study 59
Graduate Work in Education 181
Graduation 56
Graduation, Requirements for 5
Group Requirements 57

Page
Health Service 73, 186
High School Certificate, Requirements for 58
History 120
History of the College 35
Home Demonstration Agents 30
Home Economics, Department of 247
Home Economics, School of 241
Horticulture 97
Hygiene 128
Incomplete Work 52
Instruction Faculty 13
Intramural Sports 72
Industrial Education 224
Industrial Division 207
Industrial Education 224
Index 269
Irrigation (See Agricultural Engineering) 201
Journalism 117
Junior College 53
Landscape Architecture 98
Late Registration 51
Latin 125
Library 42
Library Science 179
Location of the College 34
Major Subject 55
Marketing 82, 143
Master's Degree
    Master of Science 59
    Master of Education 62
Mathematics 121
Mechanical Drawing 216
Merchandising 148
Metalwork and Mechanical Drawing 216
Military Science and Tactics 255
Minor Subject 55
Modern Languages and Latin 122
Music 182
Non-Resident Fee 65
Normal Registration 51
Nutrition 247
Officers of Administration 12
Opera 72
Phi Kappa Phi 73, 265
Physical Education 186
Physical Plant 38
Physics 125
Physiology, Public Health and Hygiene 128
Plant Pathology 92, 108
Policy of the College 34
Political Science 153

Page
Portuguese 125
Poultry Husbandry 101
Predental Training 105
Premedical Training 104
Probation 52
Psychology 191
Public Health 128
Radio 218
Range Management 235
Recreation 186
Registration and Credits 51
Reserve Officers Training Corps 257
R. O. T. C. Advanced Courses 260
R. O. T. C. Band 260
R. O. T. C. Basic Courses 259
Scholarship and Probation 52
Scholarships and Awards 68, 266
School of Agriculture 75
School of Arts and Sciences 103
School of Commerce 139
School of Education 169
School of Engineering, Industries and Trades 195
School of Forestry 229
School of Home Economics 241
Secondary Education 176
Secretarial Science 155
Self Help 67
Senior College 55
Smith-Hughes (See Vocational Agriculture and Vocational Home Economics) 79, 242
Social Organizations 72
Social Work, Division of 162
Sociology 160
Soils 84
Sororities, Honorary and Social 73
Spanish 125
Special Awards 68
Special Fees 66
Speech 129
Speech Clinic 73
Standing Committees of the Faculty 21
Stenography 158
Student Body Organization 72
Student Employment (See Self Help) 67
Student Expenses 65
Student Health Service 73
Student Organizations 72
Student Publications 73
Summary of Attendance 267
Summer Camp (Forestry) 230
Summer Session 47

Page
Supervision of Women Students 73
Table of Contents 5, 6
Teacher Placement Bureau 170
Teachers' Certificates 58
Teaching Assistantships 68
Textiles and Clothing 250
Theatrical 72
Trades and Industries 226
Transfer Students 50
Two-Year Certificate 56
Typewriting 158
Vegetable Crops 102
Veterinary Science 102
Vocational Agriculture 79
Vocational Education 178
Vocational Home Economics 243
Vocational Students 50
Wildlife Management 238
Women's Residence Hall 41
Woodwork and Building Construction 222
Zoology and Entomology 133