Utah State Agricultural College
LOGAN, UTAH

BULLETIN

SUMMER SCHOOL CATALOG
Vol. 47 March, 1947 No. 3
Utah State Agricultural College

BULLETIN

SUMMER SCHOOL
ANNOUNCEMENT FOR 1947

June 11 – August 30

FIRST SESSION
June 11 – July 19

SECOND SESSION
July 28 – August 30

Please Bring This Bulletin With You
When You Come to Register
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KENNETH WARNER
Federal Extension Headquarters, Department of Agriculture

CLAYTON WHIPPLE
United States Department of Agriculture

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Associate Professor of Nutrition

J. STEWART WILLIAMS, B.S., M.A., Ph.D.
Professor of Geology
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Summer quarters have achieved a significant place in American collegiate institutions, partly because they are organized to meet the needs of so many different groups of people. There are always some students who carry on with their regular scholastic program, there are the elementary and secondary teachers meeting certification requirements or proceeding toward advanced degrees as they continue their regular teaching duties, and finally there are many special groups who use a week or two weeks or longer for special work specifically adapted to their professions or avocations.

The Utah State Agricultural College Summer School is organized to meet these diverse needs. This year, 1947, there will be more regular students than ever before in its history. Returning service men and women either entered the regular year a quarter or two late, immediately following release from service, or they feel the necessity of speeding up their educational training because of the time they have spent in the service. The College program is designed to meet this need. There will be a full quarter of work for those who want it. During the period June 11 to August 30 students may earn as much credit as during any quarter of the year. Some classes will continue through the eleven weeks, others will carry through the first session only but they will be followed by courses which begin and continue through the second session.

Teachers will be returning in greater numbers this year. There is the pressure for degrees, stimulated by generally adopted salary schedules which give substantial monetary recognition to degrees. Many teachers worked in some war-related service during the war years and many of these now face the necessity of acquiring additional credits for recertification.

Second Session

Regularly scheduled Second Session classes will begin Friday, July 28, and continue for five weeks, to August 30. The same rules as apply in the first session operate on the amount of credit a student may take. Second session classes meet on Saturday in addition to the usual meeting days. Any regular college course which is not definitely scheduled for the second session will be given in that period if ten students petition the Summer Quarter Dean and join the class. Credit in the second session is computed on the basis of one hour of credit for 12 one-hour lecture periods or 12 three-hour laboratory periods. Registration forms will not be accepted after the close of any second session period in which the classes are given.

Students who desire to register for credit in research problems or field studies must make the necessary arrangements with the Registrar's Office at the beginning of the second session period. Credits allowed and fees charged for this type of study will depend on the time spent and the work accomplished.
Registration

Registration for the Summer Quarter will take place Wednesday, June 11 in the Main Reading Room of the Library, beginning at 8 a.m. and continuing to 3 p.m. Students who fail to complete registration on Wednesday may do so any succeeding afternoon from 1 to 4 p.m. in the Summer School office (M125). The first step in registration is to call at the Registrar's Office to obtain registration forms and instructions.

Seven and one-half credits per session are considered a normal load. The maximum load for which students may register in either the first or second session without special action of the attendance and scholarship committee is nine credits, five credits for three weeks, or three credits for two weeks. If excess credit is granted by the committee, a special fee of $2 per additional credit will be charged. A reduction of one and one-half credits per week will be made in the maximum credits allowed late registrants, as well as those students who register for less than the six weeks' period. Scheduled courses, whether regular or second session, may not be given if less than eight students register.

All graduate students must register with the Dean of the Graduate School, Dr. B. L. Richards. The Dean will be in the Main Reading room of the library on Wednesday, June 11: thereafter, at his office in the Plant Industry building.

Summer School Fees for 1947

<table>
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<tr>
<th>Item</th>
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<tbody>
<tr>
<td>Registration for Summer Quarter</td>
<td>$15.00</td>
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<tr>
<td>Tuition for Summer Quarter</td>
<td>20.00</td>
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<tr>
<td>Registration fee for either term</td>
<td>10.00</td>
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<tr>
<td>Tuition fee for either term</td>
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<tr>
<td>Registration for three credits or less</td>
<td>10.00</td>
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<tr>
<td>Registration for five credits or less</td>
<td>15.00</td>
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<tr>
<td>Coaching School fee</td>
<td>10.00</td>
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</table>

(Students who pay the regular $35 or $20 may attend the Coaching School without additional charge).

<table>
<thead>
<tr>
<th>Item</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Auditor's Fee (per course)</td>
<td>3.00</td>
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</table>

(Does not apply to regularly registered students who may secure visitor's permits from Registrar's Office).

<table>
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<tr>
<th>Item</th>
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<tr>
<td>Excess Credit (for each credit)</td>
<td>2.00</td>
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<td>Camping Trip</td>
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<td>Packing and Equipment—Rental</td>
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<td>Transportation</td>
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<tbody>
<tr>
<td>Forestry Camp fees</td>
<td>35.00</td>
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<td>Registration and Tuition</td>
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<td>Laboratory fee</td>
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(Board provided on cost basis)

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<th>Item</th>
<th>Fee</th>
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<td>Library fee for Children's Literature</td>
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A special fee of $.50 per credit hour will be charged all students taking laboratory courses. The special fee for P.E. 73 (golf) is $3.00. Students who pay regular fees will be admitted without additional charge to all lectures, entertainments, and special features.

THE GRADUATE SCHOOL

B. L. Richards, Dean

Objectives and Organization

The Graduate School of the College is organized to serve the educational needs of men and women who have completed their undergraduate work and who desire to qualify themselves for professional services or who may wish to identify themselves with a program of higher education leading to a teaching or research career on the college or university level. In all advanced work, effort is made to bring the student into direct contact with the basic research and teaching activities in his chosen field to the end that he may obtain a comprehensive view of a specialized field of knowledge together with the training essential for effective teaching or independent investigation. In Graduate work the aim is to achieve a high standard of scholarship rather than to fulfill routine course requirements.

Departments of the College that offer graduate work in related fields or in natural educational areas cooperate (1) to determine the needs for graduate work within the educational areas; (2) to provide fundamental and basic course work or training within the areas. (3) to foster the spirit of scholarship and research and to determine standards of achievement characteristic of the areas involved; and (4) to promote institutional standards and give institutional character to graduate work beyond that which is made possible by independent departmental direction.

Graduate work in the College is directed by a Graduate Council, which consists of the Dean of the Graduate School and seven members of the faculty appointed by the President. The scope of the Graduate School covers all graduate study in the college.

Admission to the Graduate School

A graduate with a Bachelor's degree from the Utah State Agricultural College or from any other accredited college or university may be admitted to the Graduate School (see No. 3 on page 16). Seniors in the College, who have an average of a "B" or better in all their courses in their Junior and Senior year and who at the beginning of any quarter lack not more than five quarter credits to complete all requirements for the Bachelor's degree, may be allowed to register for a limited amount of Graduate work. All courses so selected for Graduate
credit must be approved in advance by the Head of the Department and by the Dean of the Graduate School. In no case, will Graduate credit be allowed if the student's total credit for which he is registered during the quarter exceed 16 hours.

Students are admitted to Graduate studies in social work who have taken a Bachelor's degree with: (1) a major in social work; or (2) a major in sociology, economics, political science or psychology and have a total of not less than 36 credits in these four departments; or (3) a major in child development, physical education, public health or education and who also have 25 credits in one of the four social sciences above listed with a fair balance among them. Students over 35 are admitted only by special arrangement.

Admission to the Graduate School does not imply admission to candidacy for an advanced degree. Such admission is granted by the Dean of the Graduate School only on recommendation of the Head of the Department and of a special examining and advisory committee as explained below. All students registering in the Graduate School must have their registration card signed by the Dean of the Graduate School.

Students who wish to register in the Graduate School should submit their application at least one month before the opening of the quarter in which they wish to matriculate. In all cases, students who are not graduates from the Utah State Agricultural College must provide a certificate of graduation and a transcript of credit taken in other institutions. If his transcript of credit does not accompany the application, a date should be specified at which transcript will be provided. Blanks for making application can be had from the Registrar's office or from the office of the Graduate School.

**MASTER'S DEGREE**

All approved graduate courses in the College lead to the Master of Science Degree. Majors for the Master of Science Degree are offered in all the basic biological, physical, and social sciences, and in the various educational, industrial, and professional areas as follows: Animal Industry, Crop and Soil Science, Education and Psychology, Engineering and Technology, Forest, Range, and Wildlife Management, Home Economics, Irrigation and Drainage, and Microbiology. The specific departments or groups of departments (over 35 in all) in which the Master of Science Degree is given, together with the course service provided by the departments, may be determined by consulting the departmental statements provided in the catalog under the various undergraduate schools of the College.

**Requirements and Procedures for Obtaining A Master of Science Degree**

1. **Acceptance for Registration as a Candidate for a Master's Degree.** A student who has been registered in the Graduate School for one quarter and who has satisfied the Department in which he proposes to do his graduate work may be admitted to candidacy for a Master of
Science Degree upon the written recommendations of the Head of his Department and of a special examining and advisory committee appointed by the Dean of the Graduate School. All students working to become candidates for a Master of Science Degree will apply directly to the Graduate Dean. Application blanks are available at the office of the Graduate School.

2. Major Professor and Advisory Committee. The applicant will be assigned by the Dean of the Graduate School to a major professor who in all cases will be a member of the teaching staff of the Department in which the student has chosen to do his major work and who will be chosen in consultation with the student and the Head of the Department involved. The Major Professor will advise the student in the planning and the prosecution of his course of study and in his research work and will function as chairman of the student's Advisory and Examining Committee. The Major Professor will be aided by an Examining and Advisory Committee consisting of himself as chairman and at least three other members chosen from the faculty of the Major Department or closely related Departments. A fifth member, completing the committee personnel, may be chosen from the faculty of the English Department. The committee is responsible for all examinations dealing with the candidate's work.

In instances where the thesis chosen by the applicant is based on research supported by the Experiment Station or by Federal or other outside agencies, the applicant with the advice of the Major Professor and the Head of the Department may be assigned to a special Thesis Director. This thesis director may not be a member of the teaching staff or of the Major Department in which the student is majoring. The Thesis Director will become a member of the student's committee, directly responsible for the student's research and thesis, and will function in this connection with the Major Professor in directing the student's educational program. The Dean of the Graduate School and the Head of the Department in which the student is specializing are ex-officio members of all committees and advisory groups.

3. Qualifying Examination and General Requirements. By examination of the records of the student's scholastic work and by special examination both oral and written, the advisory and examining committee shall satisfy itself as to the adequacy of the student's preparation and advisability of his pursuing Graduate work.

No student, however, will be admitted to candidacy until he has completed at least one quarter's work in residence with an average of "B" or better, and who has not received an average of "B" grade in his Junior and Senior years of undergraduate studies. Exceptions may be made where it is shown by the head of the Department that the student has special aptitudes which are not measured by his scholastic record.

4. Program of Study. If the Advisory Committee is convinced that the preparation and ability of the student are such as to give reasonable assurance of success in advanced studies, then, with him, the committee under the direction of the Major Professor 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 residence research culminating in a thesis may be accepted as fulfilling residence requirements. Under no condition will extension credit or credit transferred from other institutions be permitted to shorten the period of residence.

(b) At least 45 credits in courses numbered 100 or over in addition to any lower or upper division courses which may be necessary to strengthen the undergraduate preparation in his major or minor subjects.

(c) At least ten credits conclusive of work connected with the thesis in courses numbered 200 or above.

(d) A thesis with 9 to 15 credits. All courses allowed toward graduation shall be in the major department or closely related fields and must be completed with a grade of "B" or above. Under no condition will more than 16 credits be allowed in any one quarter, with 12 hours as a maximum for students on a one-half time basis.

Any modification of these requirements requiring action of the Dean of the Graduate School will be considered only if they are submitted by the chairman of the applicant’s Advisory Committee and as part of the student’s entire proposed program of study.

The candidate will submit his proposed programs of course study and research and make application to the Dean of Graduate School on blanks provided at the office of the Graduate School. This application must be accompanied by a critical statement of the student's thesis and by a general plan of his research procedure.

5. Time Limitation for Application. Application for admittance to candidacy must be made before the student has completed more than one-third of the credits allowed toward his Master's Degree. The application should be submitted by the end of the first six weeks of the quarter preceeding that in which he completes his work and is to be graduated. In no case will application be honored later than the last week of this same quarter.

Notice of admission to candidacy, together with a letter of instruction, concerning the thesis form, and final examination, will be sent to the candidate by the Dean. 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 for official checking and binding two copies of the thesis.

Thesis

Each candidate for a Master of Science Degree must present a thesis on a topic within the field of his major subject which must represent from 9 to 15 hours of the credit presented for his degree. In all cases the thesis must represent a contribution to the field of knowledge based on the student's own research or a treatment and presentation of known subject matter from a new point of view. After tentative approval by the Department, the thesis must be typewritten in standard form and submitted to the student's Examining Committee at least two weeks before the date of his final examination. A typewritten and carbon copy of the final draft properly signed by the Major Professor, the Head of the Department, a representative for the
Library, and the Dean of the Graduate School must be submitted to the Librarian of the College to be deposited in the Library of the College one week prior to date of graduation. If the student is to be graduated at the June commencement, the thesis must be submitted in its final form by May 20 preceding commencement.

**Examination**

Each candidate for a Master of Science Degree will be required to pass a comprehensive final examination on the subjects of his Graduate study and on his thesis. This examination may be oral or written as his committee may decide and is open to all faculty members and officials of the Graduate School. Arrangements for the time and place of the examination will be made by the Dean of the Graduate School upon the recommendation of the Major Professor or Head of the Department. A member of the Advisory Committee, other than the Major Professor or a representative of the Graduate Council, will be appointed to act as chairman of the examination and will submit to the Graduate Council the results of the examination. For candidates who are to receive their degree at the June commencement the date of the final examination must not be later than April 3. When the examination is passed and the thesis submitted and deposited with the Librarian, the Dean of the Graduate School will present the name of the candidate to the College faculty for approval. He will also instruct the candidate regarding attendance at commencement and on the necessary matters relating to his graduation.

**Time Limit for Completing Work for a Master's Degree**

Work for a Master of Science Degree must be completed within six years from the date of matriculation as a regular student in the Graduate School if the work is done wholly or in part during the regular academic year. If the work is done entirely in summer sessions, a maximum of seven years is allowed. Older work may be revalidated by examination.

**Extension Courses**

Credit toward a Master of Science Degree will not be granted for correspondence study. The amount of extension credit to be allowed will be determined in consideration of the student's entire course program. In no case will more than 9 quarter hours be recognized as counting toward a degree. All extension courses for which graduate credit is sought must be regularly registered for through the Graduate School and must have the sanction of the Head of the Department in which the student is doing his Graduate work.

All students who satisfy the requirements for graduation by the close of the Summer Quarter are listed with the class of the following year and will 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.
SUMMER SESSION

CLASS SCHEDULE

Classes will begin at 7 a.m. throughout the Summer Quarter. Four periods are scheduled during the morning hours: 7, 8, 9, and 10. Bells ring on the hour and classes begin immediately and continue for fifty minutes to 7:50, 8:50, and 10:50. The 11 a.m. hour is kept open as a lecture period during the first session and no classes are scheduled at that time. Afternoon classes begin at 1 p.m. and continue on the hour until 5 p.m. During the second session hours for some classes will be arranged by agreement of students and teachers.

EXTENSION WORKERS' SCHOOL

Special graduate courses for extension workers, both men and women, will be conducted through three weeks, June 9 to June 27. The two principal courses listed for the group, which will include half of all the extension workers of Utah as well as several from surrounding states, are Extension Methods and Extension Journalism. Dr. Kenneth Warner of the Federal Extension headquarters in the Department of Agriculture, will direct the work in Extension Methods. Dean Carlton Culmsee and John Stewart, Extension Editor, will teach the course in Extension Journalism.

MUSIC CLINIC

The Summer School sponsored a music clinic in band and orchestra for several years immediately preceding the war. This program has now been revived and this year will include chorus as well as band and orchestra. The Clinic will be conducted Monday, June 16 to Friday, June 27 inclusive. It is expected to appeal to all musical directors of the area and to high school and junior high school students who wish to sing or play under the direction of the top music men of the country.

William Gould, director of the famous Trojan band at the University of Southern California, will have charge of the band. Norvel Church of Columbia University will direct the orchestra and Francis M. Baxter, director of music for the Spokane, Washington schools, will train the chorus.

Housing and board will be provided at cost for students who come from a distance. The male students will be housed in one residence hall and the female students at another. Students can participate in one or more of the programs. In addition, numerous activities are planned for the students, permitting them to enjoy a vacation and at the same time improve their musical performances. Students (high school and junior high) must express intention to register and make a deposit covering part of the board and room cost. Such students must also be recommended by their music directors.

COACHING SCHOOL

The annual summer coaching school at Utah State Agricultural College is unquestionably the best in the Rocky Mountain area and it
is probable that over the years it is equal to any offered in the country. The visiting coaches selected for 1947, Wallace Butts of Georgia and Lee Patton of West Virginia, assure another quality school. It may be the best in a long series because both men are young, enthusiastic, vigorous men who have only recently reached the heights and who are intent on staying there. The largest enrollment in the history of the program is expected because of the many service men returning to coaching. They will want to get acquainted with the developments in football and basketball and get partially acclimated after an absence in some cases of several years. Football is scheduled for the morning, basketball for the afternoon. Registrants in the school have free playing privileges at the Logan Golf and Country Club. The dates are June 9-13.

**FORESTRY SUMMER CAMP**

The School of Forest, Range, and Wildlife Management owns or controls 3,000 acres of forest and range land approximately 25 miles from the campus within the Cache National Forest, where summer camp facilities are established. Eleven weeks of field instruction is given at the Tony Grove Summer Camp and is required for graduation for all students in the School of Forest, Range, and Wildlife Management. Attendance at this camp is required between the sophomore and junior year and is pre-requisite to the technical courses of the junior and senior year.

There are five field instruction courses offered at summer camp with a total of 16 credits, and students in the School of Forest, Range, and Wildlife Management are required to take all five courses. This summer camp opens on the second Monday following the close of the Spring Quarter (June 16) and continues for a period of 11 weeks (August 30).

**LIVING ACCOMMODATIONS**

The College Residence Hall on the campus will be available for Summer School students. Reservations should be made immediately with Dean Ione Bennion. The College cafeteria will serve meals through the day. Other board and room accommodations can be obtained near the campus at reasonable cost. Some small apartments are also available for the Summer Quarter. Recently acquired facilities will be available for armed service personnel, both married and unmarried. The College maintains a Housing Bureau which is prepared to aid students in making satisfactory living arrangements. Mr. C. L. Pocock is director of this Bureau and students interested should write or consult him.

**RECREATION AND ENTERTAINMENT**

Summer Quarter students will be offered many recreational and cultural features during the first six weeks. Several dancing parties, canyon parties, and conducted tours to adjacent regions of special interest are scheduled.
TEACHERS' CERTIFICATION

By attending the Summer Quarter of Utah State Agricultural College, it is possible to meet any of the requirements for Utah certification with the exception of practice teaching; and, since the College is on the Accredited List of the Association of American Universities, credit will be allowed for any subject completed in the Summer Quarter that forms part of the certification requirements of any state.

TEACHERS' PLACEMENT BUREAU

A Teachers' Placement Bureau, directed by Dean E. A. Jacobsen, functions in connection with the Summer School. All teachers seeking employment may register in this bureau. Superintendents and others who employ teachers will find it to their advantage to consult the list of applicants which will be furnished upon request. Interviews with applicants will also be arranged.

KEY TO BUILDINGS

M—Main
A—Mechanic Arts
E—Engineering
P—Plant Industry
L—Animal Husbandry
G—Gymnasium
N—Library
F—Forestry
W—Widtsoe Hall or Chemistry
H—Home Economics and Commons
MS—Military Science
FH—Field House

STANDING COMMITTEES

ATTENDANCE AND SCHOLARSHIP—Professors V. H. Tingey, A. J. Morris, Ricks, West, Richards.
CERTIFICATION OF TEACHERS—Professors McClellan, Richards, Nielsen.
CREDITS AND ADMISSIONS—Professors H. B. Peterson, Hayward, Boyle, Wilcox, Neuberger, Jones, Murray, Registrar.
HOUSING—Mr. Pocock, Dean of Women; Van Shaar.
REGISTRATION—The Academic Deans, Professors Hayward, Jeppsen, H. B. Hunsaker.
SUMMER SCHOOL ENTERTAINMENT—Professors Hunsaker, Mortimer, Robinson, Dutton, Bennion.
TEACHER PLACEMENT—Professors Jacobsen, Humpherys, Carlisle, Cawley.
AGRICULTURE

R. H. Walker, Professor

Visiting Faculty Member

Clayton Whipple

190-290. World Agriculture. A survey of agricultural conditions throughout the world with special emphasis on the relation of these conditions to America's agricultural problems. Daily 9 and special hours arranged. June 12-July 3.

Three credits. M356.

Whipple

AGRICULTURAL ECONOMICS AND MARKETING

W. P. Thomas, George T. Blanch, Professors;
E. M. Morrison, Assistant Professor


Staff

105. Agricultural Finance. A study of principles of agricultural credit. Emphasis is given to problems and methods of financing agriculture. Three credits. First session, daily 9 and one hour arranged, M178.

Staff

102. Principles of Farm Management. 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. Three credits. Second session, daily 7 and one hour arranged, M178.

Staff

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 methods and technique involved in dealing with problems of land use. Three credits. Second session, daily 9 and one hour arranged, M178.

Staff

ANIMAL HUSBANDRY

L. L. Madsen, L. E. Harris, Professors; J. A. Bennett, Assistant Professor

155. Advanced Animal Breeding. Attention will be given to various fundamental phases of physiology of reproduction, genetics, breeding systems and to problems arising in breeding operations. Prerequisites, A. H. 15 or Zool 12. Three credits. First session. Daily 8. Fri. 1.

Bennett

200. Problems in Animal Breeding. This course will consist of special assignments, reports and discussions. Students will be expected to review literature in various phases of animal breeding, and
to prepare a comprehensive and critical review of at least one phase of the subject. Time and credit arranged. First session. Bennett

10. Feeds and Feeding. A study of the differences in digestive tracts of farm animals and the physiology of digestion and feed utilization, the composition of feeds, the balancing of rations, and a brief discussion of the feeding of cattle, horses, sheep and swine. Five credits. Second session. Daily 7 and 8. L207. Harris

150. Animal Nutrition. Attention will be given to various fundamental phases of animal nutrition, including protein, carbohydrate, fat and mineral metabolism, vitamins, content and deficiencies of range forage, and feed and forage poisoning. Prerequisites: Chem 10, 11, 12 (or equivalent), and An. Hus. 10, or Bact. 111. Four credits. Second session. Daily 8. M.W. 11. L203. Madsen

151.251. Nutritional Diseases. Special consideration will be given to cause, detection, treatment and prevention of the major nutritional diseases of laboratory and farm animals. Prerequisite: An. Hus. 150. Three credits. Second session. Daily 10. Madsen

210. Problems in Animal Nutrition. Same as A.H.200, except work will be in animal nutrition. Second session. Time and credit arranged. Harris

ART

C. Fletcher, Professor Emeritus; H. R. Reynolds, Professor; E. Thorpe, Assistant Professor

1. Design and Form Study. Creative experience with color; texture and pattern as found in nature and the Arts; Also drawing and modeling. Daily 8. Second session. Two and one-half credits. Room M330 B. Thorpe

51. Drawing for Elementary Grades. Methods of teaching drawing, painting and modelling in the elementary school will be taken up. First session. Daily 1. Two and one-half credits. Room M 330 C. Fletcher

52. Handwork for Elementary Grades. Method of teaching all kinds of craft and handwork suited to elementary grades. First session. Daily at 8. Room M 330 E. Two and one-half credits. Reynolds

104. Creative Expression. A drawing; B, painting in oil or water color, or pastel; C, illustration. Credit and time arranged. Students must complete 30 hours of work for each credit sought. Criticism and help will be given daily between 9 and 11. And in sketch class T. and Th. 4 to 7 during the first session. Room 330D, Fletcher Second session, Thorpe

106. Creative Sculpture. A, clay modelling; B, carving in stone or wood; C, plaster and artificial stone casting. Credit and time arranged as in 104. Criticism daily 9 to 11. Room M 330 D. First session. Fletcher
113. Art Metalry. A, copper and sheet metals; B, basketry; C, polychrome and gesso; D, textile blockprinting, stencilling, batik or crayonexing. 30 hours work per credit. Criticism daily 9-11. First session. Time and credit arranged. Reynolds

105, 110, 115, 120. These subjects listed in the winter catalog will be given first session if applied for. Staff

BACTERIOLOGY AND PUBLIC HEALTH

W. W. Smith, Professor; K. R. Stevens, Associate Professor; L. W. Jones, William A. Scholes, Assistant Professor

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. First session. M.T.W.Th., 10 a.m. and 1 p.m. P302. Stevens

11. Fundamental Bacteriology Laboratory. The general bacteriology laboratory only for those students who wish to substitute Bact. 1 plus 11 for Bact. 10. M.T.W.Th. 2-5. Two credits. First session. P303. Staff

50. Public Health and Hygiene. Three credits. First session. Daily 7 a.m. and 1 hour arranged. P302. Smith

60. Food Poisoning. Three credits. First session. Daily 8 a.m. and one hour arranged. P302. Stevens

90. History of Bacteriology. Two credits. First session. M.T.W. Th., 9 a.m. P302. Smith

50. Public Health and Hygiene. Three credits. Second session. T. Th., 8 a.m. and daily 9 a.m. P302. Jones

155. School Health. Designed to meet the practical needs in health and health training in the school. It includes methods and materials in health training and instruction. (Meets state certification requirements in health education.) Three credits. First session. Daily 8 and 1 hour arranged. Scholes

BOTANY

B. L. Richards, Professor; Arthur Holmgren, W. S. Boyle, Assistant Professor


SUMMER SESSION

ACCOUNTING AND BUSINESS ADMINISTRATION

V. D. Gardner, Professor; L. Mark Neuberger, Associate Professor;

25. Introductory Business Administration. An introductory course in the fundamentals of business administration. It is intended that this course shall furnish the student with a background for the study of the more complex problems of business. Not open to freshmen. Lectures and reports. Five credits. First and second sessions. Daily 9, M351.

54. Psychology of Business. The methods of 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 Psychology 54.) Prerequisite, General Psychology or instructor's approval. Two and one-half credits. First session. Daily 2, M351.

62. Principles of Marketing. A basic course designed for students in commerce, home economics and agriculture. (See also Ag. Econ. 62.) Three credits.

63. Principles of 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. Lecturers and assigned cases. Five credits. First and second sessions. Daily 10, M351.

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, School of Home Economics, School of Forestry, and other non-Commercial students. (See also Accounting 100.) Three credits. First and second session. M W F 7, M301G.

100L. Accounting for Non-Commercial Students (Lab). Laboratory to accompany accounting 100; optional but recommended. One credit. First and second sessions. M 2-4, M301G.

111. Industrial Cost Accounting. Process cost accounting, standard costs, estimating cost systems, distribution costs, special considerations. Five credits. First and second sessions. Daily 9, 301G.

125. Labor Problems. The emphasis 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. (See also Eco-
nomics 125.) Two and one-half credits. First session. Daily 8, M354.

156. Principles of Advertising. 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 products, the choice of media, consumer research and the work of advertising departments and agencies. Actual cases will be studied and analyzed to lead the student to judge the possibilities of advertising as a sales tool for various products and firms. Selected reading and cases. Credits. First and second sessions. Daily 7, M351.

165. Money, Credit and Prices. The structure and operations of money and financial institutions. Special attention given to bimetallism, the gold standard, the money market and the relation of money and credit to prices. Prerequisites, Econ. 51, 52. (See also Economics 165.) Two and one-half credits. First session. Daily 10, M355.

CHEMISTRY

R. L. Hill, Sherwin Maeser, D. A. Greenwood, Professors; B. V. Weidner, Associate Professor; T. M. Burton, Harris Van Orden, Assistant Professors

5. Chemical Principles & Qualitative Analysis. A course in the theory and practice of qualitative analysis. Prerequisite, Chemistry 4 or equivalent. Three lectures and two three hour laboratories both terms. Five credits. Lec. M.W.F. 9 a.m. M. W. 2-5, W204.


121. 122. Organic Chemistry. An introductory course in the fundamentals of the chemistry of the carbon compounds. Prerequisites Chem. 5 or a B grade or better in Chem. 12. Five lectures and five laboratory periods per week both terms. Five credits each term. Lec. Daily 8. Lab. daily 2-5, W302.

DAIRY HUSBANDRY AND MANUFACTURING

George B. Caine, A. J. Morris, Professors


Note: Any of the laboratory courses in dairy manufacturing will be offered to students whose preparation is adequate. Time and credit arranged.

ECONOMICS

W. L. Wanlass, Professor; E. B. Murray, Associate Professor; L. J. Arrington, Assistant Professor

51. General Economics. This course is for the general college student regardless of his field of specialization. The emphasis is on an understanding of the principles and institutions that underlie the operations of the economic system. 2½ credits. Daily 8. First session, M355.


165. Money, Credit and Prices. The structure and operations of money and financial institutions. Special attention given to bimetallism, the gold standard, the money market and the relation of money and credit to prices. Prerequisites, Econ. 51, 52. 2½ credits. Daily 10. First session. M355.

125. Labor Economics. The emphasis 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. 2½ credits. Daily 8. M354.


141. Current Economic Problems. A study, based upon current literature, of the problems of conservation, production, labor-management disputes, unemployment, government finance, monopolies and cartels, international economic relationships, and government participation in economic life. Special emphasis will be given to the impact of these problems on the inter-mountain West. 2 credits. Daily 10. Second session. M355.
EDUCATION

C. E. McClellan, Professor Emeritus; E. A. Jacobsen, L. R. Humpherys, Professors; L. G. Noble, Assistant Professor

Visiting Faculty

Lorene K. Fox, Edward Naugher, Mark Nichols, Kenneth C. Warner

108. Social Studies in the Public Schools. A consideration of the social responsibilities and opportunities of children and youth under current social conditions. Both content and method in the social studies field will be considered. Two and one-half credits. First session, daily 10, M280. Fox

112S. Principles of Vocational Education. A consideration of the fundamental principles and practices in vocational education with special emphasis on the newer trends and developments. Two and one-half credits. First session, daily 8, M204. Humpherys

113S. Principles of Guidance. Major emphasis given to organization of guidance as a service, including individual and occupational differences, tests, measurements and counseling. Two and one-half credits. First session, daily 2, M279. Humpherys

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 the nature and extent of the articulation and of the unifying principles upon which a well articulated program of education rests. Two and one-half credits. First session, daily 10, M204. Provost

125. Special Methods in Teaching Agriculture. Fundamental principles and practices of teaching, selection and organization of subject matter, and supervising agricultural activities. Three credits. First session, daily 1 with one laboratory period arranged, M279. Humpherys

137. Problems in the Teaching of Reading. Discussion of the principal factors contributing to reading difficulties. Observation of methods in remedial reading. One and one-half credits. First session, M. W. 3, observation arranged, M279. Fox

138. The Improvement of Teaching in Secondary Schools. Designed to meet the needs of teachers, supervisors and administrators. Emphasis will be upon recent developments in the improvement of teaching—learning situations and activities from the junior high school to the junior college. Two and one-half credits. First session, daily 8, M279. Provost

145. Safety Education. Emphasizes the need for safety education in the modern world, the role of the school in a program of safety, and methods and materials for teaching safety. Two and one-half credits. First session, daily 9, M204. McClellan

161. Audio-Visual Aids in Education. Emphasizes the importance of audio-visual aids in the school program. Building a workable pro-
gram in which is utilized the newest materials and techniques. Two and one-half credits. Second session, daily 9, M279.


201. Backgrounds of Modern Education. An integration of the history and philosophy of education as a basis for understanding of modern education. The evolution of educational thought, the sources of great philosophies of education in relation to their times. Two and one half credits. First session, daily 10. M279. McClellan

211S. Educational Measurements and Statistics. Principles of statistical analysis as applied to educational evaluation and measurement. Three credits. First session, daily 7, with one laboratory period arranged. M280. Humpherys

221. Advanced School Administration. A general study of the work of the school administrator and the principles upon which the profession of school administration operates. School organization and personnel management will be emphasized. Two and one-half credits. First session, daily 10. M282. Jacobsen

230. Elementary School Supervision. A study of the principles and practices of school supervision including the qualifications and responsibilities of the supervisor. Two and one-half credits. First session, daily 8. M280. Fox

237S. Problems of Secondary Education. For graduate students who are or who wish to become administrators, supervisors, etc., the emphasis being on problems peculiar to the secondary field together with ways and means of solving these problems. Individual problems will receive emphasis in the course. One and one-half credits. First session M. W. 3. M204. Provost

266. Critique of Educational Literature. The course aims to secure acquaintance with the more important literature of education and to evaluate contributions. Two and one-half credits. Second session, daily 10. M279. Noble

267. Introduction to Research. An inquiry into the nature and sources of research problems with a study of the methods of working out such problems in the field of education. Some attention is given of thesis writing as a problem related to research. Two and one-half credits, first session, daily 1. M279. McClellan
ENGINEERING

Harold R. Kepner, Professor; Cleve H. Milligan, Dean F. Peterson, Jr, Associate Professors; A. Alvin Bishop, Joseph Coulam, S. H. Daines, B. L. Embry, Eldon M. Stock and W. A. Tingey, Assistant Professors


A.E. 105S. Farm Woodwork and Buildings for Agricultural Students. Location, planning, and construction of farm buildings, Wood and metal preservations, fences and fencing, and the farm workshop, Prerequisite, W. W. 61b and A.E. 11. 3-5 credits. First Session. Coulam

A.E. 105S. Farm Woodwork and Buildings for Agricultural Students. Location, planning, and construction of farm buildings, Wood and metal preservations, fences and fencing, and the farm workshop, Prerequisite, W. W. 61b and A.E. 11. 3-5 credits. First Session. Coulam

C.E. 63. Descriptive Geometry. Principle and auxiliary views; points, lines, and planes; development, intersections, and warped surfaces; mining problems, prerequisite, C.E. 61. Three credits. 12 weeks period. Embry or Daines

C.E. 84. Plane Surveying. Topographical Surveying and Mapping, Introduction to route surveying, cross-sectioning, some rural and city surveying, and solar observations. Prerequisite, C.E. 81. Three credits. Second session. Tingey

C.E. 87. Summer Surveying Camp. Surveying office and field practice in camp. Topographic, land, route, geodetic and hydrographic surveying. The student pays his own transportation and living expenses and a registration fee. Prerequisite C.E. 85 or equivalent. Nine credits. First session. Stock and Tingey


C.E. 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, trasiration, and run-off; methods of collection and use of hydrologic data; extension of precipitation and runoff records; water supply analysis and stream flow forecasting. Four credits. Twelve weeks period. Milligan

C.E. 149. Irrigation Institutions. Law governing the acquirement, adjudication and distribution of water rights; reclamation projects, mutual companies, irrigation districts commercial companies and state water codes. Three credits. First session. Milligan


C.E. 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. Second session.


ENGLISH

N. A. Pedersen, Professor Emeritus; I. N. Hayward, Associate Professor; M. Q. Rice, Assistant Professor; Veneta Nielsen, Instructor

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. Daily 9. Both sessions. N316.


21. Readings in Poetry. 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. Two and one-half credits. Second session. Daily 8. N314.

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. Five credits. Daily 7-9 First session. Moore Library.
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. Two and one-half credits. Daily. 9. N.310. First Session.

159. Emerson and Thoreau. A study of the essays, lectures, and poetry of the two principal figures of the Concord Group as representatives of the literature and thought of their time and as thinkers whose ideas are still important. Two and one-half credits. Daily 10. First session.


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. Two and one-half credits. Daily 8. N.316. First session.

**FOREST, RANGE, AND WILDLIFE MANAGEMENT**


**Forestry**

90. **Improvements.** Practical field problems in trail and telephone construction; the use of field radios; methods of fire prevention, detection and suppression; Care and use of woods tools and horses in Forest, Range, and Wildlife work. Problems in construction, planning recreational areas, and water development. Three credits. Summer Camp.

96. **Surveying.** Practical field problems in surveying methods commonly employed in forest, range, and wildlife management. Type mapping. Three credits. Summer Camp.

97. **Forest Practice.** Study of timber types and successional stages. Timber cruising, log scaling, inventories and growth of immature stands, stem analysis, taper measurements, sample plots, milling and utilization studies. Three credits. Summer Camp.

**Range**

98. **Range Practice.** Field work in range management involving familiarization with vegetation, training in making reconnaissance,
methods of studying vegetation, and determining utilization. In addition time will be devoted to range improvement and management planning. Three credits. Summer Camp.

Wildlife

99. Wildlife Practice. A survey of lakes and streams for improvement purposes and for restocking; the use of census methods for big game, game birds, and rodents; rodent identification and study of activities; cover mapping; preparation of animal skins; and study of deer and elk ranges. Three credits. Summer Camp.

GEOLOGY

J. Stewart Williams, Professor; Philip Fix, Associate Professor

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. Five credits. Daily 8, 9. First session. M283.

   Note: Those engineering, forestry and soils students who would normally take Geology 3 during the Fall, Winter or Spring quarters will be accommodated in this course, and will be given work equivalent to the regular Geology 3 course.

104. Regional Geology of the United States. A study of the major geologic structure and land forms of the physiographic provinces of the United States as they have influenced the exploration, settlement and industrial development of the nation. Two and one-half credits. Daily 10. First session. M283.

HISTORY

Joel E. Ricks, J. Duncan Brite, Professors

8. Recent European History. This course will cover the period from 1914 to the present time, emphasizing the problems following the last war and the underlying causes of World War II. Two and one-half credits. Second Session. Daily 10, N312.


136, 236. History of Early Utah. From the beginnings to the death of Brigham Young in 1877. Two and one-half credits. First Session. Daily 10, N312.


HOME ECONOMICS

FOOD AND NUTRITION

E. O. Greaves, U. Vermillion, Professors
P. Rowland, Instructor


101S. Catering. Planned so to give the individual a working knowledge of the techniques of organization and management that are involved in feeding groups of persons on special occasions. The occasions selected will cover as wide a variety as possible. Specific work assignment will include problems that deal with planning, purchasing and executing; also with the artistry involved in menu selection, table and room decoration and arrangement. Class limited to twelve. First Session. Three credits. M.W.F.; laboratory 7 hours per week by special assignment. H1.

146S. Conservation and Technology of Food. A lecture and laboratory course in approved scientific, practical methods of food processing, preservation and storage and its influence upon the nutritive value of the foods. First Session. Two and one-half credits. T.W.Th.F. 9. M. 2-5, H203.

185. Nutrition Refresher Course. A review of the principles of the newer knowledge of nutrition with attention given to its application to the school and public health field. First Session. Time to be arranged. Conference arranged. Two and one-half credits. Greaves

CLOTHING, TEXTILES & RELATED ARTS

Florence Gilmore, Instructor

33S. Home Furnishing. Open to anyone. The course is planned to develop skill in selection and techniques in making, remodeling, and caring for home furnishings. The laboratory will include instruction on making draperies, curtains, lamp shades, use of sewing machine attachments, refinishing and upholstering furniture. First three weeks only. Two and one-half credits. M.W.F. 8-11, F 11. H216. Gilmore

169S. Recent Developments In Textiles. Designed for teachers and advanced students of Clothing and Textiles who want to be brought up to date on trends in the field of Textiles. Includes a study of new fibers, finishes, and materials being placed on the market and economic conditions affecting their production as well as factors influencing choice and care of present day materials. Prerequisites, Textiles 24, or equivalent. One credit. T. Th. 10. H208.

**HOUSEHOLD ADMINISTRATION**

E. O. Greaves, Professor; A. P. Brown, Professor Emeritus

149S. Economics of Household Consumption and Production. An economic analysis of household production; source and distribution of family income under different conditions; practice in planning budgets for specific families; and laboratory work in the scientific consideration of household standards and organization. Required of all students before or taken parallel with residence in Home Management House. Pre-requisites: Foods 20, 21, and 106 for all Home Economics Education students; others, Foods 9 or 106. First Session. 2½ credits. Daily 8. H203.

150S. Household Administration. Provides six weeks of directed experience in practical homemaking; is open to groups of six mature students with similar training and background. Precedence is given to applications from teachers in the field of home economics. The course may be applied on State Certification requirements. Applications should be received at the college not later than May 20. Three credits. Cottage.

**INDUSTRIAL EDUCATION**


**Visiting Faculty**

Howard B. Gunderson, Utah State Director, Trade, Industrial and Distributive Education, Salt Lake City, Utah.

Dale Peterson, Supervisor, On-the-job-training, Utah State Department of Education, Salt Lake City, Utah.
INDUSTRIAL ARTS EDUCATION

42. Plastics. To acquaint students with the new and important group of plastic materials now being produced and to teach them the fundamental operations used in working these materials. Students will complete projects in hand and machine work that apply to the Industrial Arts program. Two credits. July 7 to 18; Daily 8-11 and 3-5. A114.

43. Recreational Crafts. A course designed especially for students majoring in recreational leadership. The work consists of two parts: (1) planning and organizing craft work as a part of community recreational programs, and (2) laboratory work in various craft fields, such as wood, leather, plastics, archery, metals, etc. Two lectures and two laboratory periods per week. Two credits. Second session. Time arranged. A114.

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. Supervised practice will be arranged for each student. Three credits. Time arranged. France and Jeppsen.

123. Curriculum Problems in Industrial Arts. To teach industrial arts instructors the application of the skills and knowledge they have acquired in their basic shop courses to the teaching of the State Program of Industrial Arts. Students will construct projects that are suited to the work recommended by the State Department of Education for junior high schools. They will also prepare the necessary lesson plans and teaching aids that will supplement and aid teachers in carrying out the program. The course this year offers work in the crafts, wood, metal and electrical units. Two credits. Section I, June 9-20; Daily 8-11 and 3-5. Section II, June 23 to July 3; Daily 8-11 and 3-5. A114.

150. General Industrial Photography. Principles and practice in the fundamentals of photography with its application to industrial projects. Training will be given in the selection and use of cameras, lenses, meters, films, filters, paper, developers and accessories. Attention will be given to the selection of view and study of image, exterior and interior lighting, arranging of models and projects and determining exposures. Developing, printing, enlarging, mounting and other processes will be studied. Two credits. June 9 to July 3. Daily 3-5. E403.

107. Principles and Objectives of Industrial Education. To acquaint students with the general philosophy and purposes of Industrial Education and to enable them to understand and appreciate its place.
in the modern educational program. Students will study and compare
the general principles and objectives of Industrial Arts Education and
Trade and Industrial Education with those of General Education. Three
credits. June 23 to July 3; Daily 7-9 and 1-3. E304. Gundersen

109. Course of Study Building in Industrial Education. To teach
students to prepare and use a course of study consisting of the outline,
analysis, progress chart, lesson plans, instruction sheets, references,
tests, and instructional schedule. Each student will complete this
work for one unit of instruction. Five credits. June 23 to July 18;
Daily 7-9 and 1-3. A101. Jeppsen

120. Personnel Relations. Problems or handling people, manage­
ment, and safety as they affect employers and employees, Students
will present, analyze, and work out solutions to each of these types
Van Shaar

121. Methods in Industrial Education. To teach students the latest
methods and techniques of teaching as applied to individual and group
instruction in the fields of Industrial Education. Each student will
have the opportunity of using these different methods in presenting
lessons before the class. Three credits. June 9 to 20; Daily 7-9 and
1-3. A101. Jeppsen

202. Supervision of Industrial Education. Latest in the supervis­
ion of Industrial Education. The course is designed for administrators,
supervisors, and teachers in service who are responsible for the im­
provement of industrial education through supervision, and for those
students preparing for supervisory work. Special attention will be
given to the supervision of all-day, part-time, and evening programs
of industrial arts and vocational education. Students will prepare a
plan of supervision suitable to their situation. Three credits. July
7 to 18; Daily 9-11 and 3-5. E304. Bedell

104. Occupational Analysis. Principles and practice in analyzing
occupations for the purpose of determining teaching content. Stu­
dents will complete an analysis of one unit of a trade or occupation.
Three credits. June 9 to 20; Daily 7-9 and 1-3. E206. Peterson, Wines

211. Part-Time Education. A study of the content, methods, and
special devices to be used in Part-Time Education programs. Em­
phasis will be placed upon pertinent problems and their solutions.
Students will prepare a syllabus covering the essential materials for a
course in Part-Time Education. Three credits. June 9 to 20; Daily
9-11 and 3-5. E206. C. M. Allen

213. Evening School Programs, Development, organization and
improvement of evening school programs in Industrial Education. Stu­
dents will prepare a syllabus covering the essential materials needed
for such a program. Three credits. June 23 to July 3; Daily 9-11
and 3-5. E304. Ewing

215. Apprenticeship. Development, organization and improvement
of apprentice training programs for industry. Students will prepare a
syllabus covering the essential materials needed for such a program.
Three credits. July 7 to 18; Daily 7-9 and 1-3. E304. Ewing
The following courses will be offered in the departments as indicated. Other courses listed in the Industrial Division section of the Regular Catalog will also be offered if 8 or more students register.

**Aeronautics**

30. **Air-Age Education.** This course is designed primarily to assist teachers in presenting and integrating air age materials to the various academic levels. Course content includes: need for an air-age education, aero dynamics, navigation, weather, economics of air transportation, use of audio-visual aids, and contributions of governmental agencies. Two credits. June 11 to July 3. Daily 3 to 4:30. A220. Wines

31. **Civil Air Regulations.** Aeronautical Ground School (Primary). The laws relative to aviation. This is prescribed material required by Civil Aeronautics administration for private pilot certification. Two credits. June 11 to July 3. Daily 1 to 2:30. A220. Summers

32. **General Service and Operation of Aircraft.** Aeronautical Ground School (Primary). The study of the theory of flight; construction, inspection, and care and maintenance of aircraft and aircraft engines. This is valuable for all pilots and aeronautical students. Two credits. July 28 to August 15. Daily 1 to 2:30. A220 Klein

37. **Private Pilot Certificate.** Aeronautical Flight School (Primary). Prerequisite: Aero 31 and 32. Designed to meet C.A.A. requirements for private pilot certificates. It consists of flight training for a minimum of 35 hours or a maximum of 50 hours. This includes at least 17 hours’ dual flight instruction and 18 hours’ solo flight. Successful passing of all C.A.A. flight and ground tests for the private pilot’s certificate is required for satisfactory completion of this course. Medical examination and transportation to and from the airport on a scheduled basis are provided. Equipment consists of airplanes of 65 H.P. or more. Three credits. First session. Time arranged. Wines

137. **Commercial Pilot Certificate.** Aeronautical Flight School (Advanced). Prerequisite: Aero 37, 136, or Private Pilot Certificate. Designed to meet requirements of Civil Aeronautics Administration for commercial pilot’s certificate. It covers the aerodynamics of the maneuvers comprising the primary flight course with their interpretation and application to heavier aircraft. It also emphasizes precision cross country flight, and in such advanced maneuvers as will further develop the student’s knowledge and technique. Some night flying practice is suggested but not required. Successful passing of all C.A.A. flight and ground tests for the Commercial Pilot Certificate is required. Medical examination and transportation to and from the airport on a scheduled basis are provided. Equipment consists of airplanes of 65 H.P. or more. Minimum total flight hours: 165 plus two hours flight check. Maximum total flight: 210 hours plus two hours flight check. Twelve credits. First session. Time arranged. Wines
138. Flight Instructor Certificate. Aeronautical Flight School (Advanced.) Prerequisite: Aero 136, 137. Designed to meet C.A.A. requirements for flight instructor certificate. It is similar to prescribed C.A.A. course for training and experienced pilot as flight instructor. It consists primarily of the practical application of elementary and advanced flight instructing in compliance with and according to Civil Air Regulations. Successful passing of all C.A.A. flight and ground tests for the flight instructor certificate is required. Medical examination and transportation to and from the airport on a scheduled bases are provided. Equipment consists of airplanes of 65 HP or more. Maximum total flight hours: 30 hours plus three hours’ flight test. Two credits. First session. Time arranged.

Automotive


51. Automobile Chassis. Principles and practice in the construction; operation, and servicing of the modern automobile chasses. The units of the course include axles, wheel suspension, steering gears, frames, springs, universals, drive shafts, and brakes. Open to any college student. Three credits. First session. Lecture, Daily 2; Lab., Daily 3-5. A109.

52. Automobile Power Plants. Principles in the 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; fuel, cooling and lubricating systems. Open to any college student. Three credits. First session. Lecture, Daily 2; Lab., daily 3-5. A109.

53. Automobile Electricity. (Prerequisite, Auto 52.) Principles and practice in the construction, operation, and servicing of the electrical systems used on the modern automobile. The units to be covered include starting, generating, lighting, ignition, and special accessory systems. Three credits. First session. Lecture, daily 2; Lab., daily 3-5. A101.


96. Engineers Welding Laboratory. Exploration in modern welding. Students receive basic instruction and practice in the use of oxy-acetylene welding and cutting, electric arc welding, and spot welding equipment. Two credits. Both sessions. T.Th. 9-12.

191. Electric Welding. (Prerequisite, Auto 91). Principles and practice in the use of the latest types of electric-arc welding equip-
ment. Safety measures 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. First session. Lecture, daily 4; Lab., daily 2-4. A110. Kemp

Metalwork

51. Machine Practice. Training in the use of hand tools, and in bench work and tool sharpening, together with elementary training on drill press and engine lathe. Tools and machine parts are made that give practice in the operations essential in machine shop work. Included are assignments of reading on machine work subjects, and application of mathematics to machine work. Five credits. Both sessions. Daily 2-5. A102. Kemp and Somers


NOTE: Two and three credit courses in Machine Practice are scheduled each quarter. See Regular College Catalog.

91, 92, 93. Shop Drawing. The use of instruments and types of lettering on template drawings and graphic solutions; standard elements and symbols with make up mechanical drawings used in industry. The theory of sharpe and its representation and size description. Isometric drawings, and the translations of orthographic into pictorial drawings. Two credits. Both sessions. Times arranged. E307. Shaw

Radio

Any of the following courses will be given if sufficient demand is evidenced.

23. Radio Electricity. Fundamentals of electricity; direct current circuits and circuits and circuit components; magnets and magnetism. Laboratory work covers soldering, wiring, use of diagrams and construction of several types of simple radio receivers. Three credits. First session; M.W.T.Th. 9. Staff


25. Receiver and Transmitter. An introductory course covering the principles of radio communication systems, receivers, transmitters, and antennas. Laboratory work covers the construction, operation and adjustment of the fundamental units. Three credits. Both sessions; M.W. 11; Lab., W. 2-5. Staff

80, D. C. Circuits. Principles and applications of DC circuit analysis and resistive network. Five credits. Both sessions; Daily 10. Staff

82. Electron Tubes. A study of the principles, characteristics and operation of electronic cauum tubes in modern radio and associated equipment. Laboratory work covers the measurements, adjustments and effects in vacuum tube circuits. Four credits. Both sessions. Time arranged. Staff

110. Communication Circuits. Principals and characteristics of transmission lines, networks, matching sections and filters used in communication systems. Four credits. Both sessions. Time arranged.

150. Advanced Laboratory Work. Advanced radio laboratory work in connection of equipment and communication units; measurements and laboratory technique. For junior and senior students majoring in Radio. Two credits. Both sessions. Time arranged. Staff

Woodwork

8. Shop Problems. Deals with shop mathematics, treating formulas used in solving problems of areas, volumes, speed relations, cutting speeds, steel square, etc. Three credits. M.W.F. 7. Full Summer Quarter. Coulam

61, 62, 63. Joinery and Millwork. The necessary basic training for students preparing to enter the woodworking trades, and also for students who wish a knowledge of woodwork for their own needs. The courses 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. Two, three, or five credits. Full Summer Quarter. Nyman

61a. Woodwork for Engineers. A brief basic course dealing with the use of hand and machine tools used in the various woodworking trades. Also layout, wood properties, and lumber grading. Two credits. T. Th. or M.W. 9-12. Both session. Nyman

72. Concrete and Clay Products. 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 are also studied. A number of projects are built in the laboratory during the course. Two credits. Lecture T. 8; Lab., arranged. Full summer session. Coulam

170. Wood Finishing and House Decorating. 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 is required to do practice work in each type of finishing. Two credits. M.T.W.Th. 9-12. First six weeks. Swenson, Mortimer

171, 172, 173. Cabinet Work. The design and construction of furniture and cabinets including 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, N.W. 61, 62, and 63. Two, three, or five credits. Full Summer Quarter. Daily 2-5. Swenson

Note: Two and three credit courses in Joinery and Millwork and cabinet work are scheduled each quarter. See Regular College Catalog.

JOURNALISM

Carlton Culmsee, Professor; John Stewart, Extension Editor

120. Agricultural Journalism. Lectures, practice and practical experience in preparing agricultural and homemaking material for the press and radio; preparation of reports, circular letters, demonstrations, and lectures. Intended to cover the general field of extension information. Graduate credit allowed. Two and one-half credits. First three weeks, June 9-27. Daily 2-4. M359. Stewart and Staff

MATHEMATICS

V. H. Tingey, Professor; R. L. Calvert, Assistant Professor; J. Elich, J. L. Francisco, Instructors

34. Introduction to College Algebra. Prerequisite: One year of high school algebra. Students who have had more than one year of high school algebra will not be given college credit for Mathematics 34. Three credits. Daily 8. First session. M357. Francisco


SUMMER SESSION

MUSIC

Summer 1947

N. W. Christiansen, Walter Welti, Professors
George Pahtz, Betty Rae Marshall, Instructors

Visiting Faculty

Francis Baxter, School Music Supervisor, Spokane, Washington
Norval L. Church, Associate Professor of Music Education, Columbia
William Gould, University of Southern California

11S-111S. Harmony. Beginning students register for 11; students who have college credit for first year harmony register for 111. Attention will be given to individual needs. Two and one-half credits. First session. Daily at 1. R252A. Christiansen and Marshall

17S-117S. String Ensembles. Offering an opportunity for trios, quartets, and other small units. One credit. Time arranged. Pahtz

24S. High School Chorus. Open to all high school students. High School graduates who meet college entrance requirements will receive one hour of college credit. First two weeks. Daily 10:00 and 2:00. M207. Baxter

26S-126S. Summer School Chorus. Open to all Summer School students. A concert program will be prepared for the closing week of the session. One and one-half credits. First session. M.W.F. 12. M207. Welti


77-A. Concert Band. All members of the band will register for this course. High school graduates who need college entrance requirements will receive one hour of college credit. Daily 9-11, 3-4, Field House. Gould

77-B. All members of the orchestra will register for this course. Credit given as for 77.A. Daily 10-11, 1-3. N30. Church

87S. Musical Literature for Strong Instruments. A study will be by the use of recordings of standard concerti, trios, and quartets. Also biographical sketches of composers and performers. Two and one-half credits. Daily 9. Childrens Library. Pahetz


121S. Teaching and Supervision of Instrumental Music. A theoretical and practical course designed to meet the problems of the teachers of bands and orchestras. Points in teaching the various instruments will be stressed. One-half credit. Daily 11. M30. Church

131S. Special Problems in Public School Music. The class will center around the individual problems of members enrolled. These problems will be presented and discussed for solution. On-half credit for first two weeks; or two and one-half credits for six weeks. First session. Daily 8:00. M53.

170S. Principles of Singing. A study of the method of tone production, and voice preservation. Tone work and repertoire will be discussed and applied in class. Class members will also prepare and present solos. T.Th. 12. First session. Welti

174S. Sectional Rehearsals. Directors will be asked to coach various sections. On alternate days they will visit groups with Mr. Gould who will offer constructive criticism on work being done. One-half credit. Daily 8, rooms to be assigned. Gould


179S. The Marching Band and the Drum Major Importance of the Marching Band. How to secure the best results for all phases of field work. The technique of the drum major. For students and directors. One-half credit. Daily 4. Quadrangle.

PRIVATE INSTRUCTION COURSES

52S-152S. Piano Instruction. For beginners, advanced students, and teachers of piano. Appointments and fees to be arranged with the teacher. One credit for six lessons; two credits for twelve lessons. First session, Arranged. Associate Teachers

55S-155S. Voice Instruction. Private arrangements must be made with the instructor as to lesson appointments and fees. One credit for one lesson per week. First session. Welti

58S-158S. Wind Instruments. For beginners, advanced students, and teachers of brass and woodwind instruments. Appointments and fees to be arranged with the teacher. One credit for six lessons; two credits for twelve lessons. First session. Arranged. Christiansen

62S-162S. Violin Instruction. For beginners, advanced students and teachers of violin. Appointments and fees to be arranged with
the teacher. One credit for six lessons; two credits for twelve lessons. Arranged.

63S-163S. Cello. For beginning or advanced students. Appointments and fees to be arranged with the teacher. On credit for six lessons; two credits for twelve lessons.

MODERN LANGUAGES AND LATIN

G. A. Meyer, Professor; G. C. Jensen, Professor Emeritus

102. Intermediate German. Daily at 9 a.m. and 1 p.m. Five credits. M359. Jensen

102. Intermediate French. Daily at 9 a.m. and 1 p.m. Five credits. M369. Meyer

102. Intermediate Spanish. Daily at 9 a.m. and 1 p.m. Five credits. M80. Staff

PHYSICAL EDUCATION—RECREATION

H. B. Hunsaker, Professor; J. K. Vanderhoff, E. Dutton, I. Heaton, Assistant Professors; S. Nelson, V. Hall, Instructors

Visiting Faculty

Jane Fox, Indiana University
Glenn Arnett, Utah State Department of Education

Service Courses

25. Tennis (Ele.) Men and Women, one credit. First session.
   Sec. 1, daily 2
   Sec. 2, daily 8
   Sec. 3, daily 1


49. Inter. Modern Dance, one credit, daily 2. First session.

54. Swimming (Ele.), one credit. First session.
   Sec. 1, Women, daily 12
   Sec. 2, Men, daily 3

62. Archery (Ele.), Men and Women, one credit. First session.
   Sec. 1, daily 9

66. Badminton (Ele.), Men and Women, one credit. First session.
   Daily at 10.

73. Golf (Ele.) Men and Women. One credit. Lab. Fee. First session.
   Sec. 1, daily 8
   Sec. 2, daily 9
89. Intramural Sports. Teams will be organized. Softball, badminton, tennis, and horseshoe tournaments will be conducted. Students registering for this course will be placed on teams for tournament participation. One credit. Daily 12. First session, Hall

163. Recreational Games. Men and Women. The study and practice of leisure-time activities. Clock golf, badminton, shuffleboard, croquet, archery, volleyball, table tennis, will be presented, and an intramural program planned. Two credits, daily 1, gym 27. First session, Hall


Professional Courses

85. Organization of Intramurals. A course for men and women physical education teachers desiring to study organization and supervision of junior and senior high school intramural programs. Two and one-half credits. Daily 8, Hunsaker

153. Dance Leadership. This is an advanced class in dance leadership designed to meet the needs of those students who expect to teach social or square dancing, either in schools or churches. One quarter of social or square dancing must be taken as a pre-requisite. Special emphasis will be given to methods of teaching group dancing and in creating original routines. A syllabus will be required. Two credits. Daily 2, M.W. 3. First session, Heaton

157. Field Work Recreation. (Prerequisite approval of department head.) This course is designed to give practical experience in conducting recreational programs at playgrounds and camps under the supervision of the college recreation staff and the director of the program to which the individual is assigned. Students will be expected to plan and conduct programs in a variety of activities applying principals, methods, and techniques gained in his prerequisite work. Four credits. Time arranged. First or second session, Hunsaker

179. Leadership. Social Recreation. Deals with the principles and techniques of leadership in recreation activities for the home, school and community; methods of promoting, organizing, and directing social games, social mixers, community outings, hikes, picnics, opportunities for practical experiences in leading various recreation activities. Men and women. Two and one-half credits, M.T.W. 7-9 p.m. First session, Nelson, Heaton

111. Creative Rhythms for the Elementary School. Methods and materials in guiding the creative rhythmic experiences of the elementary school pupil. Two and one-half credits. Daily 9-11, June 16—July 4. First session, Fox

112. Physical Education Curriculum for Elementary Schools. Methods and practice in evaluating, developing and presenting a well-rounded curriculum of physical education for the elementary school, with emphasis on the rhythmic phase. Two and one-half credits. Daily 1. First session, Fox, Arnett
113. **Construction of Rhythmic Instruments.** Construction and practice in use of rhythmic instruments, drums, rattles, tambourines, etc. as accompaniment for rhythmic activities in the elementary school. Two and one-half credits. Daily 9. Lab. arranged. First session.

Dutton

**195-295: Problems in Physical Education.** Men and women. Deals with current problems in physical education. Especially designed for upper division majors and teachers of physical education. Two and one-half credits. Daily at 1, gym 27. First or second session. Hunsaker

271. **Research—Thesis Writing.** Provides for individual work in thesis writing with the necessary guidance and criticism. Time and credit arranged. First or second session. Hunsaker

250. **Reading and Conference.** A course providing for individual directed study. Men and women. Two and one-half credits, time arranged. First session. Hunsaker

25. **Tennis (Ele.)** Men and Women, one credit, daily 9. Second session.

Vanderhoff

54. **Swimming (Ele.)** One credit, daily 10. Second session.

Vanderhoff

73. **Golf (Ele.)** Lab fee, men and women, one credit. Daily 8. Second session.

Vanderhoff


Staff

132. **Techniques of Acquatics.** Designed for students majoring in physical education. Students will be taught the techniques of aquatics. Each student will be expected to prepare a teaching syllabus for the class work. Second session.

Vanderhoff

**Coaching School**

E. L. Romney, Director of Athletics; Wallace Butts, Football Coach, University of Georgia; Lee Patton, Basketball Coach, West Virginia University

120. **Methods of Coaching for Men.** A theoretical and practical consideration of training and coaching men's athletic teams.

120B. **Basketball Coaching.** June 9 to 13 inclusive. Daily 2:30 to 5:00. One credit.

Patton

120F. **Football Coaching.** June 9 to 13 inclusive. Daily 7:30 to 11:00 a.m. One credit.

Butts
PHYSICS

W. Gardner, Professor; P. J. Hart, L. S. Cole, Associate Professors; E. W. Payne, Assistant Professor; J. O. Jensen, Instructor

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 to 7. Daily 10. Five credits. W106.


246. Tensor Analysis. Time and credit arranged. Gardner

266, 267. Geometrical and Physical Optics. Time and credit arranged. Hart

275, 276. Electricity and Magnetism. Time and credit arranged. Gardner

POLITICAL SCIENCE

F. D. Daines, Professor Emeritus; M. R. Merrill, Professor

Visiting Faculty, Clayton Whipple


125. Political Parties and Practical Politics. Two and one-half credits. Second session. Daily 1. M256. Staff
183. Current Political Problems. Five credits. Both sessions. Daily 8. (Students may register for either or both sessions. If registration is for one session only, register for two and one-half credits.) M356.


PSYCHOLOGY

A. Frandsen, Professor; D. R. Stone, Assistant Professor
Visiting Faculty, Asahel Woodruff

3. 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. Both sessions. Daily at 8. Main 279.

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. Prerequisite, General Psychology. Two and one-half credits. Session one. Daily at 2. Main 279.

103a or 203a. Clinical Psychology; Psychometrics applied to guidance, adjustment problems, and remedial teaching. A course for school counselors, personnel workers, social workers, and clinical psychologists, which considers the selection evaluation, administration, interpretation and practical uses of tests of intelligence, aptitudes, interests, personality and quality of personal and social adjustment. Prerequisite, General Psychology. Two and one-half credits. Second session. Daily 9. Main 279.

103c or 203c. Clinical Psychology. Theory and practice of counseling and psychotherapy. In educational and vocational guidance, in improving school achievement and worker efficiency, and in treating problems of personal and social maladjustment, the uses of the following procedures will be studied; non-directive counseling; directed problem-solving interviewing; giving advice, assurance, persuasion, and information; and of controled family, school, club or camp, community, and institutional environments. Prerequisite, General Psychology. Two and one-half credits. Second session. Daily 11. Main 279.

102b. Applications of Statistics to Education and Psychology. An elementary study of the statistical procedures used in handling test scores in schools and other guidance agencies and of the concepts needed to read current educational and psychological literature. Two and one-half credits. Second session. Daily at 1. Main 279.

Woodruff

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 to understanding such topics as propaganda, war, group prejudices, morale, and leadership. Prerequisite, General Psychology. Two and one-half credits. First session daily 10. Main 279.

Stone


Woodruff

SECRETARIAL SCIENCE

V. D. Gardner, Professor; L. Mark Neuberger, Associate Professor;
Ina Doty, Assistant Professor

69. Transcription Practice. Intended to develop skill and speed in the transcription of letters from shorthand notes. Students must be able to take dictation at not less than sixty words a minute and type at least forty words a minute. One credit. First session, daily 9, M304.

Doty

80. Intermediate Shorthand. Designed for students who have had one year of shorthand. The course includes a review of the theory of Gregg shorthand with the development of a new vocabulary. Special attention will be given to the attainment of speed in taking dictation. Two and one-half credits. First session. Daily 8. M305.

65. Indexing and Filing. Drill and practice will be given in alphabetic, numeric, triple check automatic, subject, decimal, geographic, and soundex methods of filing. The indexing, coding and filing of letters, cards, blueprints, catalogs, and other business forms will be emphasized. First session. Daily 10. M303.

Doty

86. First Quarter Typewriting. For students who have had no previous training in typewriting. This course is designed to develop a thorough knowledge of the keyboard and to give practice in the use of the mechanical features of the typewriter. Special attention will be given to the development of typewriting for personal use. One credit. First session. Daily 12. M303.

Doty

97. Office Machines. Designed to give students a knowledge of the operation of two machines widely used in the modern business office. The following machines will be studied:

Burroughs Calculating Machine. Application of the calculating machine to various business computations such as addition, multiplication, subtraction, division, accumulation, fixed decimal point work, percentages, chain discounts, prorating, decimal equivalents, constants and inventories.
**SUMMER SESSION**

**Burroughs Commercial and Bank Posting Machine.** Instruction and practice in the application of the posting machine to bookkeeping methods in commercial business houses and banks. Two and one-half credits. First session. Daily 8. M303.

Neuberger

191. Problems in Teaching Business Subjects. An analytical study of devices, methods and materials used in teaching bookkeeping, typewriting, shorthand, junior business, business law, commercial geography and related business subjects. Consideration will also be given to the problems met by the business teacher in organizing, administering a business department. Two and one-half credits. First session. Daily 10. M305.

Neuberger

**SOCIOMETRY**

Joseph A. Geddes, Professor; Lawrence S. Bee, Associate Professor

Visiting Faculty, Lowry Nelson

70. Principles of Sociology. The principles of Sociology are considered in relation to social progress, social origins, social structure, public opinion, social organization and social evolution. Five credits, two and one-half credits each term. May be taken independently. Daily 8. M361

Bee, 1st Term

Geddes, 2nd Term

140. Social Psychology. Personality development among different social classes and peoples. Analysis of crowds, publics, social movements and other collective behavior; ideologies and institutions. Prerequisites: Soc. 70 and Psy. 3. Two and one-half credits. Daily 10. M206.

Bee

156-256. Rural Social Institutions. Consideration of the factors in the rural environment which condition the functioning as well as the structure of social institutions. Major institutions of property in land, farming systems, the family, school, church, local government, welfare and health are treated. Two and one-half credits. Daily 9. M206.

Nelson

160. Family Relations. The social emotional development of the child in the family. Marital adjustment; behavior; problems; ideological considerations. Two and one-half credits. Daily 7. M206.

Bee

175-275, The Mormon Farm Village. The origin of this pattern of land settlement, comparison with alternate patterns from economic and social standpoints, its role in the successful settlement of the Mormon West. Advantages and disadvantages of the village in the present and future cultural context. The pioneering process under a village economy. Problems of the contemporary Mormon community, the next hundred years. Two and one-half credits. Daily 8. M206.

Nelson

201. Research in Sociology. For graduate students only. A project is organized, field work done, data classified, interpreted and placed in written form. Credit 9 to 15 hours. Time arranged. Geddes

**SPEECH**

Chester J. Myers, Professor; A. Rex Robinson, Associate Professor; Virginia Swenson, Instructor


5s. Extempore Speech. Designed to meet the specific needs of professional people 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. First session. Daily 10. Two and one-half credits. M205. Robinson Second session, Daily 10. Two and one-half credits. M205 Swenson

12-112. 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 training and to all those who are majoring in speech. Special fee. Time and credit arranged. M20-

Staff

18s. Story Telling. The story as an educational factor; analysis and callification 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. Two and one-half credits. First session. Daily 8. M205. Myers

24s-124s. Oral Interpretation. Various literary forms are studied for platform presentation. The mastering of significant selections from great masters. Reading from manuscript and from memory. Two and one-half credits. First session. Daily 9. M205. Myers

110s. 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. Two and one-half credits. First session. Daily 10. Myers
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 student and instructor are investigated and reported upon in this course. Consult the instructor for permission to register. First session. Credit and time arranged. M201.

ZOOLOGY AND ENTOMOLOGY

D. M. Hammond, G. F. Knowlton, Professors, J. S. Stanford, Associate Professor, Robert Harrison, Instructor

1. Principles of Biology. A fundamental course in the basic life principles as illustrated in both plant and animal form. 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. Five credits. Daily 10. Both sessions. M227. Harrison

2. General Zoology. A brief survey of the more important groups of animals, including the organization, behavior, reproduction, classification and relationship 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. First session. Daily 8 and 9. M227. Lab. M.W.Th.F. 1-4. Stanford

3. Invertebrate Zoology. This course is an introduction to the invertebrate animals. Classification and relationship, structural characters, development and functions are emphasized. Some attention is also given to parasitism. This and others who desire a comprehensive introduction to the animal kingdom. Both sessions. MWF. at 9. M227. Lab. T.Th. 1-4. Harrison

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 though. Prerequisite, some thorough course in Biology. Three credits. Both sessions. MWF. 8. M228. Harrison

Entomology

102. Systematic Entomology. Ent. 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 a correct placing
of all specimens in orders. To be taken only with the permission of the instructor. Three laboratory periods. Three credits. Time arranged.

103. Systematic Entomology. Continuation of Ent. 102. The collection arranged for Ent. 102 must be enlarged to at least 500 specimens, 150 species, 100 families, and 18 orders. Classification will include a correct placing of all specimens in families. To be taken only with the permission of the instructor. Three lab. periods. Three credits. Time arranged.

104. or 204. Systematic Entomology. Continuation of Ent. 103. Permission to take this course depends on the student's collection for Ent. 102 and 103. If his collection justifies further study, he may select one or two orders of insects and classify them to species. To be taken only with the permission of the instructor. Three lab. periods. Three credits. Time arranged.

210. Entomological Research. Students may select or will be assigned problems dealing with certain 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, Ent. 13, 103, and 108. Time and credit arranged.