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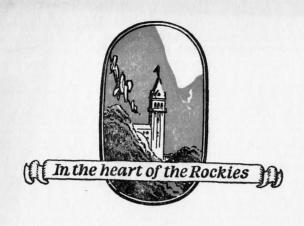
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Summer Session June 6 to July 15

1932

UTAH STATE AGRICULTURAL COLLEGE Logan, Utah

COLLEGE BULLETINS

Published by the Utah State Agricultural College at Logan, Utah Issued Monthly, Vol. 32, No. 3.

April 1932.

Utah State Agricultural College BULLETIN

Announcement for 1932 Summer Session



PLEASE BRING THIS BULLETIN WITH YOU WHEN YOU COME TO REGISTER

Entered as second-class matter, September 10, 1918, at the post office at Logan, Utah, under the act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 22, 1918.

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RECREATIONAL PROGRAM

Thursday, June 9. Faculty reception to Summer students. Dancing and refreshments.

Friday, June 17. A program of music.

Saturday, June 25. Excursion to Bear Lake.

Wednesday, June 29. Dancing party in the Gymnasium.

Saturday, July 9. Excursion to Bear River Migratory Bird Refuge under the personal supervision of the Superintendent, Mr. George E. Mushback.

Tuesday, July 12. Canyon Party, refreshments, bonfire, and lecture by Dr. E. H. Griggs.

Thursday, July 14. Summer School Drama.

The order of the events in the above program is subject to change.

The Summer Encampment of the Extension Division of the College is held on the campus in the week of July 11, and during this period a drama is produced by the Public Speaking department, an evening of music by the edepartment of Music, and each evening folk dancing, and games are participated in by all.

Week-end excursions to Bear Lake, "The Lake Geneva of the Rockies", will be conducted provided parties of ten or more are formed. These excursions leave the campus early Saturday morning and return Sunday evening. Transportation charges will be about \$2.00.

Officers of Administration and Instruction

Elmer George Peterson, A. M., Ph	h. D.	President
James Henry Linford, D. Did		Director of Summer School

VISITING FACULTY AND LECTURERS.

R W Bierman, M. A.	Football Coach
	University of Minnesota
Lofter Bjarnason, M. A	Utah State Supervisor Grammar Grades
Maud A. Brown, M. A	Director of the Cooperative Health Service, Extension Division University of Kansas
Jean Cox, M. AUtah State St	apervisor of Home Economics Education
Olga Carlson, B. A	National Field Trainer, Girl Scouts
Schubert Dyche, B. S	Professor of Physical Education Montana State College
William T. Foster, Ph. D.	Director of the Pollak Foundation For Economic Research, Newton, Mass.
	Chief of the Bureau of Agricultural Education, Washington, D. C.
	Author and Lecturer New York City
	DHead of the Department of History University of Chicago
	Director Joliet Township High School and Junior College Band, Illinois
Henry Newmann, A.M., Ph.D.	Director Brooklyn Society of Ethical Culture.
J. H. Pearson, B. S.	Specialist with the Federal Board for Vocational Education Washington, D. C.
	Basket-Ball Coach, University of Utah
Ward G. Reeder, Ph. D.	Professor of Education, Ohio State University
G. Ott Romney, M. A	Director of Athletics and Physical Education, Brigham Young University

RESIDENT FACULTY

Arranged Alphabetically

Frank Russell Arnold, M.A Reed W. Bailey, M.S Elsa Brown Bate, B.S.,M.S	Assistant Professor of Geology
William H. Bell, B.S.,M.SRussell E. Berntson,	Register
Katherine Cooper Carlisle, B.S	
Vera Carlson,	Secretary to the President
Ezra G. Carter, Dr.P.H.	Associate Professor of Public
	Health and Physiology
N. Woodruff Christiansen, B.S	Assistant Professor of Instrument-
Class D. H. B. Class MAG	al Music
Christine Bockholt Clayton, M.S.	Professor of Foods and Dietetics
Samuel Roy Egbert, B.S. Luella Eppley, B.S.	
	Stenography
Robert J. Evans, Ph.D.	Professor of Agronomy
Calvin Fletcher, B.Pd.	Professor of Art
Joseph Arch Geddes, Ph.D.	
Wallace A. Goates, B.S.,M.S	Instructor in Speech
Joseph Eames Greaves, M.S., Ph.D	Professor of Bacteriology and
	Bio-Chemistry
William Williams Henderson, M.A.Ph.D.	
	Entomology
Caroline M. Hendricks, B.S.,M.S	Women's Advisor and Assistant
	Professor of Sociology
Reuben Lorenzo Hill, Ph.D.	Professor of Chemistry
LeGrand R. Humpherys, B.S	
II D II 1 DC MC	cultural Education
H. B. Hunsaker, B.S.,M.S.	
Ernest A. Jacobsen, M.AFrances Kelley, B.S.,M.S	Instructor in Foods and Super
Charlotte Kyle, B.S.,M.A.	Assistant Professor of English
Sherwin Maeser, Ph.D.	Associate Professor of Chemistry
Bassett Maguire, A.M.	Assistant Professor of Botany
Bassett Maguire, A.M E. J. Maynard, B.S.,M.S	Professor of Animal Husbandry
Johanna Moen, B.S.	Professor of Textiles and Clothing
Aaron Newey, B.S.	Associate Professor of Machine
	Work
Niels Alvin Pedersen, A.M.,Ph.D.	Professor of English and Speech
Henry Peterson, A.M. Parley Erastus Peterson, A.B.,C.P.A.	Professor of Psychology
Parley Erastus Peterson, A.B., C.P.A	Professor of Accounting

William Peterson, B.S	
C. I aster December D.C.	Professor of Geology
C. Lester Pocock, B.S.	
Alfred H. Powell,	Publicity Service Associate Professor of Farm and
riffed II. Towell,	Auto Mechanics
William Bowker Preston, M.D.	
	Health Supervisor of Students
Harry R. Reynolds,	Assistant Professor of Art
Bert Lorin Richards, M.S., Ph.D.	Professor of Botany and Plant
	Pathology
Joel Edward Ricks, A.M., Ph.D.	
E. Lowell Romney, B.A.	Director of Athletics
Harry H. Smith, M.S.	
	Husbandry
Hattie Smith,	
Mary Sorenson,	Assistant Librarian
J. Sedley Stanford, B.S., Ph.D.	
2.1 2 1 22	and Entomology
Sidney Stocks, B.S.	
D A C DC	Auto Mechanics
D. A. Swenson, B.S.	Assistant Professor of Woodwork
Wallace J. Vickers, A.M., Ph.D.	Associate Professor of English
Wm. L. Wanlass, M.A., Ph.D.	
E D W. ADDLD	Prof. of Ag. Econ. and Marketing
F.B. Wann, A.B.,Ph.D.	Associate Professor of Plant
Franklin Lorenzo West, Ph.D.	Physiology Dean of the Faculty
Frankin Lorenzo West, Fil.D	Professor of Physics
Ray B. West, B.S., C.E.	
Ray D. West, D.S., C.E	Professor of Engineering
	rolessor of Engineering

UITAH STATE AGRICULTURAL COLLEGE SUMMER SESSION SUMMER SESSION 1932

UTAH STATE AGRICULTURAL COLLEGE

The Utah State Agricultural College will conduct the twenty-sixth annual session of its summer school at Logan, Utah, June 6 to July 15, 1932. These summer sessions have come to be known throughout the country because of the very efficient faculties that have been assembled, because of the delightful climate for summer study, and also because of the amazing wealth of plant and animal life and geological formations within easy reach of the college campus.

The Utah State Agricultural College offers ideal condition for a summer school that will appeal to students and teachers throughout the intermountain region. The Institution, 4778 feet above sea level, is located in a

beautiful mountain valley in northern Utah. The surrounding mountains furnish an abundance of cool, refreshing air all summer long. The valley sides present a delightful mosaic, backed by the Wasatch Mountains, whose canyons, lakes, and peaks furnish rare opportunities for a summer vacation.

The College is centrally located in the heart of scenic America, half way between the Yellowstone National Park on the north and the Grand Canyon or the Colorado on the south. Great Salt Lake is within a few hours' drive by auto from the College Campus while Bear Lake, aptly called "The Lake Geneva of the Rockies" nestling, as it does, in a high valley, is a scant 40 miles from Logan through beautiful Logan Canyon. Other points of interest within touring distance of the College Campus are Zion Canyon, Bryce's Canyon, Cedar Breaks, the home of the Cliff Dwellers, all in southern Uttah, and the dinosaur quarries in eastern Utah.

A SUMMER VACATION

Arrangements have been made by the College whereby students may pitch their tents on the campus and camp out while they are going to summer school. A delightful place has been provided for this purpose, equipped with electric lights and supplied with running water. A rental fee of \$3.00 will be charged for this service. Logan City, cooperating with the College, has also made available the city park just five miles from the campus in Logan Canyon. Here students who bring their camp outfits may live, making of their summer study a real vacation.

ADMISSION AND CREDITS

The college is on the Accepted List of the Association of America Universities, consequently students may feel assured that their credits will be accepted by other colleges and universities. Students will be directed to those courses they can pursue to the best advantage. A varied and extensive offering of courses is made. Seven and one-half credit hours is a normal course but nine credit hours may be taken without special permission. Students may, however, register for one additional hour in physical education.

REGISTRATION

Students will register on Monday, June 6 from 7:00 to 11:00, or any afternoon following. Class work begins Monday morning June 6 at 11:00 A. M. Students registering later than Monday, June 13 will have the number of credits for which they may register reduced one and one-half hours and a further reduction of one and one-half hours will be made for each week thereafter.

GRADUATE CREDIT

Summer quarter students are allowed six years in which to satisfy requirements for the Master's degree. This makes it possible to secure this degree without giving up present teaching employment. Those who expect to register for work leading to this degree should submit their credits to the Chairman of the Committee of Graduate work several weeks in advance of

registration and indicate the subject in which the student wishes to major. This will make it possible to have the course of study approved at the time of registration. See under Requirements for Advanced Degree in General

Catalogue.

Students in Agriculture wishing to do graduate work during the summer school may register for the regular summer school work and be assigned to specific duty with members of the Experiment Station Staff who will give them the privilege of doing experimental work during the summer. Credit will be given for this work toward an advanced degree. Students who anticipate taking advantage of this opportunity will profit by applying early so that the particular work in which they are interested may be arranged in connection with the summer program.

EXPENSES

The registration for the full term is \$15.00; for each of the two weeks courses, \$6.00 unless three of the two weeks courses are chosen, the total fee is then \$15.00; for a single course of not to exceed two and one-half credits, \$5.00. In certain of the laboratory courses, students are charged an additional fee of 50 cents a credit hour.

Good board and rooms at prices ranging for \$4.50 to \$6.00 a week can be secured in private homes.

The College cafeteria will be open during the session and midday meals will be served at cost. Dairy lunches will also be served at the College Dairy.

RECREATION.

Any Summer School to be vital must do at least two things: it must maintain the scholastic standing of the institution of which it is a part and it must also create such an environment as will renew and revivify its students whose work during the winter months has been exacting and consequently exhausting.

The Utah State Agricultural College Summer Sessions meet these conditions ideally. Its beautiful campus is situated about two miles from scenic Logan Canyon whose morning and evening breezes bathe the campus and surrounding territory with a cool, invigorating oozone laden atmosphere a direct opposite to the hot suffocating atmosphere of the lower valleys where summer schools are usually located. In Logan one may have a delightfully cool sleeping apartment where a blanket is often a luxury; even the days are hot only in rare cases and then the welcome shade of trees and bowers, abundant on the campus, make delightful even these warmest hours.

Visiting faculty members say:

"In the whole range of the mountain region there is no institution more beautifully located than the Utah State Agricultural College. On a high terrace left centuries ago by the recession of Lake Bonneville—with a delightful outlook across one of the richest and greatest of plains—above a wholesome little city, the prospect walled in by high mountain cut by rugged gorges through which rush clear trout streams smothered in Box Elder—the setting could not be finer.

"Summer work in this cool mountain atmosphere cannot fail to be restful and strengthening in a high degree, far more so than in the crowded sessions of a city university."

(Signed) David Starr Jordan President Emeritus, Stanford University

"Aside from all the advantages for the study of geology and biology I have always found Logan a delightful place. The summer which I spent at the State College was one of the most delightful in my experience."

(Signed) T. N. Carver Prof. of Economics, Harvard University

The democratic and social atmosphere, augmented by these wonderful climatic conditions, together with the wholesomeness of the association of faculty and students in receptions, excursions, hikes, etc., make the college summer session one round of delight.

Opportunities for recreation on the College Campus are varied. The large swimming pool furnishes opportunities for aquatic sports while extensive facilities exist for baseball, basket-ball, handball, volleyball, tennis and other sports under the supervision of the physical directors.

FIELD TRIPS AND EXCURSIONS.

During the 1932 Summer Session the College will conduct weekly nature study hikes led by specialists from the College faculty, who will introduce students directly to the plants, the animals, and the geology of the Cache Valley region.

These hikes will be open to all students of the school and their friends. Cache Valley and Logan Canyon afford unparalleled opportunities to study plant and animal life and Geologic formations, while Bear River Bay, to which an excursion may be taken, is only 35 miles from the College Campus, and affords one of the very finest opportunities for the study of bird life. It is the site of a large game preserve, now nearing completion by the Government. Following is a list of hikes planned. If it develops that other hikes are called for by a sufficiently large group they can be arranged. The order of these hikes is subject to change:

- 1. The Geology of the Logan Delta—Thursday, June 9.
 - Director Wm. Peterson
- 2. Bird life of Logan and vicinity—Wednesday, June 15
 Dr. Sedley Stanford
- 3. Animal life of our ponds and streams—Wednesday, June 22.

 Dr. W. W. Henderson
- Our Forest and Ornamental Trees. A visit will be made to the Jos. A. Smith's arboretum, one of the best in the intermountain West—Wednesday, July 29.

Prof. R. J. Becraft, Prof. Paul M. Dunn

5. Aquatic Plants. The plant families of our sloughs, ponds, and streams—Thursday, July 7.

Dr. B. L. Richards

TEACHERS' BUREAU

A teachers' bureau has been organized 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 lists of applicants. These lists will be furnished upon application.

SPECIAL LECTURERS

A series of special lectures has been organized dealing with social and economic conditions, given by men who are nationally famous in their particular fields. These lectures will be given daily at 11:00 a. m. and on two evenings a week at 7:30 p. m. No class periods have been scheduled for these hours thus enabling students to hear all those eminent speakers without interfering with their course work. Those wishing credit must register regularly and must submit at the end of the course a brief and acceptable summary of each lecture attended. Two credits will be given for attendance at all the lectures with summaries prepared on every lecture, and one credit for attending half the lectures. Students registering for only one credit may make their own choice of lectures. Register for Sociology 178.

SUMMER SCHOOL DRAMA.

One of the attractions of the Summer Session is the drama that is annually staged by the students under the direction of the department of English and Speech. The play chosen for production is always one of great merit.

TEACHER'S CERTIFICATION

By attending the Summer Session of the Utah 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 he Accepted List of the Association of American Universities, credit will be allowed for any subject completed in the Summer School that forms part of the certification requirements of any state.

INTERSESSION WORK

There will be no regularly organized Intersession classes. Special courses, for which residence credit may be granted, will be organized following the Summer Session for those desiring to remain on for additional residence work. Just what courses will be offered will be determined by requests received for such work. Special arrangements can also be made for students who desire to go on with research problems and field studies during the interval between the regular summer school and the opening of the fall quarter. The amount of credit earned in this way will depend upon the time spent and work accomplished. In general, by combining the Summer Session and the Intersession, it will be possible for students to obtain in a single summer, credit for one quarter's work thus reducing by one quarter the time required for completion of work for a degree. A ten dollar fee will be charged for each course taken of five hours or less. For credit in excess of five hours the fee will be \$15.00.

Courses of Instruction

Courses may not be given for fewer than five students.

AGRONOMY AND SOILS

R. J. Evans, Professor

117. Geography of Agriculture. A general survey of the agriculture of the world with special emphasis on the United States and Utah. The relation of centers of agricultural production to soil, climate, water transportation, and population. Causes of shifts in the production of different crops, livestock and other farm products. Two and one-half credits.

Daily, 10:00. Room P 201.

Evans and Agronomy Staff.

ANIMAL HUSBANDRY

E. J. Maynard, Professor Harry H. Smith, Assistant Professor

113. Animal Breeding. Includes a practical study of the principles which underlie the breeding and improvement of farm animals, methods and practices of breeding, a study of inbreeding, out crossing, line breeding, heredity variations and allied subjects. Five credits. Daily, 8:00 and 10:00. Room 207 Live Stock Building.

103. **Feeds and Feeding.** The principles of feeding, how animals digest and utilize feed. The balancing of rations and the feeding of horses, cattle, sheep, and hogs for economical production. Two and one-half credits. Daily at 9:00. Room 207 Live Stock Building.

If five or more students express a desire for some other course than these listed in Animal Husbandry, such course will be arranged.

ART

Calvin Fletcher, Professor H. R. Reynolds, Assistant Professor

133. Art Appreciation. Appreciation of painting and sculpture. A survey of the great periods of Art will be made with a view to developing an understanding of present day art. The work will be adapted alike to the art student and layman. Daily illustrated lectures with library work.

Daily, 9:00. Two and one-half credits. Room M 355. Fletcher

5, 108, 208. Painting. Any medium may be used. Students are free to work any time, credit being allowed on basis of 30 hours of painting for each credit for which the student is registered. Criticism will be given at the regular studio period from 12:30 to 2:30 except Friday. Thursday 3:00 to 6:00, group criticism will be given in the field. Full or part time credit may be taken. Room M 330 E.

Fletcher

52. Design for Public Schools. Methods of teaching design and color for the first six grades will be taken up. Two and one-half credits. Room M 330 F. Daily, 8:00. Reynolds

STUDIO COURSES

This work is done in Room 330 Main. Students may work any time but must attend at least one criticism hour daily from 12:30 to 2:30 except those given by Professor Fletcher which will not meet on Friday. Choice of hour must be reported to the instructor during the first day or two of course. Credit is given on basis of 30 hours work in the studio for each credit for which the student is registered. The following courses are open: Art 4. Free hand drawing of any type.

7. 110 Illustration: Choose any of the following:

Pen and Ink Technic Scientific Illustration Cartooning General Illustrating Costume Illustrating.

Fletcher

5. 108. Graphic art Monotypes Block Printing Etching

Fletcher

10. 113. Show Card and Sign Writing or Poster Work

Fletcher

12. 115. China Painting if 6 apply

111. Advanced Design. Elect one of the following lines of work A. B. or C.

A Interior Decoration Sketching designs of wall and interiors Furniture Designing

Wood Carving Picture Framing

B. Advanced Costume Designing

Textiles and Wall Paper Commercial Designing

D. Architectural composition 109. Modeling in Clay, Casting, etc.

Fletcher

11. Pottery. Elementary processes. Two credits 13, 116. Art Metalry. Copper and Silver-Smithing

14, 118. Leather Work. Tooling, modeling, finishing15, Basketry, Reed, raffia, or grass basketry16. 119. Wood Ornamentation. Elect any of the following: Enameling and jesso Guilding Lacquer

17. 120. Fabric Decoration. Elect any of the following:

Batik
Tie and dye and plastic embroidery
Block printing
Stenciling
Lamp Shade Decoration

Reynolds

117. Jewelry

Note: Student work is subject to retention for exhibit purposes.

ACCOUNTING AND BUSINESS ADMINISTRATION

P. E. Peterson, Professor Luella H. Eppley

25. Introductory Business Administration. An introductory course in the fundamentals of business administration. It is intended that this course shall furnish the students with a background for the study of the more complex problems of business. Not open to freshmen. Lectures and reports. Two and one-half credits.

Daily, 8:00. Room M. 302

Peterson

30. Business English and Correspondence. This course aims to give the student practice in the writing of different kinds of business letters and reports. Two and one-half credits.

Daily, 10:00. Room 302 Main.

Eppley

78. Shorthand—Advanced Theory. This course finishes Gregg Shorthand Theory. A review is given of the entire manual with advanced vocabulary development. Prerequisites, Shorthand Theory 75 and 76; Typewriting 89. Average rate of dictation 80 words a minute. Two and one-half credits. Daily, 8:00. Room 302 Main.

86. **Typewriting—Beginning.** This course is designed to develop correct technique in the operation of the machine. Average speed 25 words per minute. One credit.

Daily, 9:00 and 12:30. Room 303 Main.

Eppley

108. Business Organization and Accounting for Engineers and Non-Commercial Students. A brief course in the study of those principles of Business Organization, Management and Accounting necessary to meet the needs of the general student. Two and one-half credits.

Daily, 7:00. Room M. 302.

Peterson

BACTERIOLOGY AND BIO-CHEMISTRY

Joseph E. Greaves, Professor.

1. General Bacteriology. This course deals with the biology and significance of bacteria. The following are considered: the development of bacteriology; the morphology and physiology of bacteria; bacteria in the air;

food and water, and the role they play in the arts and industries. Bacteria as the cause of disease. Five credits.

Daily, 8:00 and 9:00. Room W 302.

Greaves.

15, 115 **Bio-chemistry.** The chemical transformations going on in the animal organism. Special consideration is given to the chemistry of foods and their digestion. Given if called for by six or more students. Two and one-half credits.

Daily, 10:00. Room W 302.

Greaves.

BOTANY

B. L. Richards, Professor F. B. Wann, Associate Professor Bassett Maguire, Assistant Professor

Botany S 1. A general course dealing with the structure, growth, nutrition, reproduction, and kinds of plants. This course is especially adapted to meet the needs of teachers of biology, and is recognized as fulfilling requirements for admittance to advanced courses in the Botany Department. Four credits. Lecture, M. T. W. Th. at 8:00. Laboratory, M. T. W. Th. at 1:30. Room P. 101.

Richards, Wann, Maguire

CHEMISTRY

R. L. Hill, Professor Sherwin Maeser, Associate Professor

3. Inorganic Chemistry. A standard course in inorganic chemistry.

Prerequisites: Either High School Chemistry or Physics, or Chemistry 1 or Physics 1 and 2. This course corresponds to the fall quarter of the standard course in Chemistry. Five credits. Daily, Lecture 10:00, laboratory, 2:30 to 5:30. Widtsoe Hall.

26. **Organic Chemistry.** An applied course in organic chemistry arranged especially for students in Agriculture and Home Economics, and stressing the chemistry of the carbohydrates, fats, and proteins. Five credits. Daily, 8:00 and 12:30. Prerequisite, Inorganic Chemistry. Widtsoe Hall.

Hill or Maeser

102. Quantitative Analysis. A course in the application of the theory and the fundamental principles of gravimetric and volumetric analysis to inorganic, agricultural, and food analysis. Prerequisite: Chemistry 5, or 15. Three credits. Lecture Thursday, 1:00. Laboratory, daily, 2:30 to 5:30. Widtsoe Hall.

ECONOMICS

W. L. Wanlass, Professor

51. General Economics. An introductory course covering the entire field of Economics. After a brief survey of man's economic development, a care-

ful study is made of those fundamental principles upon which modern economic life is based. Attention is also given to such subjects as money, credit, banking and labor problems. Two and one-half credits.

Daily, 9:00. Room M 352.

Wanlass

140. **International Economic Relations.** Special attention will be given to the basic economic relationships existing between the industrial nations of the world, international commerce, tariffs and trade restrictions, international debts and finance, and various means of promoting progress on a basis of sound economics. Prerequisites, Economics 51 or equivalent. Two and one-half credits.

Daily, 8:00. Room M 352.

Wanlass

145. **Economics of Consumption.** There is an economics of consumption that is quite as important as the economics of production. This course deals with personal and group expenditures, standards of living, budgets, variations in consumption, etc. Two and one-half credits.

Daily, 10:00. Room M 352.

Wanlass

EDUCATION AND PSYCHOLOGY

Henry Peterson, Professor
Ward G. Reeder, Professor
Ernest A. Jacobsen, Associate Professor
Lofter Bjarnason, Professor
Jean Cox, Professor
J. H. Pearson, Professor
A. K. Getman, Professor
L. R. Humpherys, Associate Professor
H. R. Reynolds, Assistant Professor
Elsa B. Bate, Assistant Professor
Addie Swapp, Instructor

4. Principles of Education. (Principles of Teaching). This course deals with the formulation of fundamental principles of teaching as based upon psychology and present theories relative to the work of the school. Two and one-half credits.

Daily, 9:00. Room, M 178.

Swapp

6. Organization and Administration. This course will include a brief survey of the evolution of our free schools; a comparative study of contemporary organization and administration: a study of the nature, organization, and function of the digerent units for educational control, (local and state and national); a study of methods of raising and apportioning funds, and special attention to the administration of the Utah School law. Two and one-half credits.

Daily, 8:00. Room, M 359.

Bjarnason

111. **Principles of Secondary Education.** A study of general principles underlying method as applied in high school and junior high school. Prerequisite: a course in General Psychology. Two and one-half credits.

Daily, 9:00. Room, M 178. Swapp

112. **History of American Education**. A study of trends in development of school control, school organization, and school support in America. June 6 to June 17. One credit.

Daily, 12:30. Room, M 206.

Reeder

121. Organization and Administration of Secondary Education. (a) The State Laws and the regulations of the State Board of Education pertaining to public high schools; (b) high school course of study, including the Utah State course; (c) organization, duties, and activities of the teaching staff and the student body; (d) development of school support; (e) educational organization and relationships. Two and one-half credits.

Daily, 8:00. Room, M 309.

Bjarnason

123. Problems in Organization and Presentation of Home Economics Subjects. For teachers of home economics who wish to plan or organize their courses of study along newer lines of procedure. Special problems in curriculum builing will be assigned to fit the individual teacher's need. The second two weeks of this course will be given under 224. Two and one-half credits.

Daily, 10:00. Room H 12.

Bate

132. Educational Tests and Measurements. A study of the relation of measurement to the educational program. Emphasis will be placed on principles and practice in test construction and upon interpretation of test results. Two and one-half credits.

Daily, 8:00. Room 357 Main.

Iacobsen

135. Statistics for Teachers. Practice in the computation and interpretation of simpler statistical measures. Use of labor saving devices in statistical computations. Three credits. June 20 to July 15.

Daily, 10:00 and 12:00. Room, 357.

Jacobsen

160. Philosophy of Education. The dependence of education, in the absence of adequate scientific data, upon the methods and deductions of modern thinking; with an attempt, also, to evaluate the functions of and relationships between the various factors that comprise our system of public education. Two and one-half credits.

Daily, 9:00. Room, 359.

Bjarnason

216. School Finance and Business Administration. A consideration of the sources from which and methods by which public school resources are:

derived; principles of budgeting and accounting; analysis of school costs; the business organization of the school system. June 6 to June 17. One credit. Daily, 10:00. Room, 306.

224. Curricular Activities in Home Economics Education for Smith-Hughes Teachers. A study will be made of recent developments in the field of Home Economics Education with special emphasis upon instructional units suited to the needs of junior and senior high school students. Assignments will include curriculum building in this field. Evaluation and need for home projects while be made. Development of short units of instruction for adults will be assigned for those especially interested in this field. June 20 to July 1. Two credits.

Daily, 10:00 and 1:30 to 3:30. Room H 26.

Miss Cox and the Home Economics Staff

226. Especial Methods in Agricultural Education. A course devoted to organization of agricultural subject matter, project supervision, part time and evening instruction, conference methods of instruction, research and current problems in agricultural education. Three credits. June 20 to July 1.

Daily, 9:00 to 11:00 and 1:30 to 3:30. Ag. Engineering Auditorium. Humpherys, Pearson, Getman

PSYCHOLOGY

101 **Principles of Psychology.** This course deals with the principles of human behavior. It is pre-requisite for other courses offered in senior college psychology. Junior college students may be admitted by special permission. Two and one-half credits.

Daily, 7:00. Room 279 Main.

Peterson

102 Advanced Educational Psychology. This course prepares for teaching in junior and senior high schools and for leadership in other lines. Prerequisite, Psychology 101 or equivalent. Two and one-half credits.

Daily, 8:00. Room 279 Main.

Peterson

104 Psychology of Family Life. Human mating; marriage and its meaning and responsibility; the psychological basis of harmony in the home, and other psychological aspects of the family. Prerequisite, a general course in psychology. Two and one-half credits.

Daily, 10:00. Room 279 Main.

Peterson

ENGLISH AND SPEECH

N. Alvin Pedersen, Professor Wallace J. Vickers, Associate Professor Charlotte Kyle, Assistant Professor Wallace A. Goates, Instructor

10. Freshman Composition. Fundamentals in sentence and paragraph structure; practice in outlining; attention to correct usage; expository and

argumentative writing. This course may be used to meet the state requirement in composition. Students entering college directly from high school may use this course to satisfy the college requirement in freshman composittion. Five credits.

Daily, 8:00 and 10:00. Room N 318.

Vickers

50. Survey of English Literature. Literature of Great Britain from Angio-Saxon period to 1700. Two and one-half credits. Daily, 9:00. Room 360 Main.

Kylie

The Short Story. Analysis of technique of stories of the nineteentlh and the twentieth centuries. The course aims to give the student a basiis by which to judge a short story. Two and one-half credits.

Daily, 10:00. Room 360 Main.

Kylie

130. The Bible as English Literature. The literature of the Bible arranged chronologically and studied in its relationship to the historical, social, and religious background of the Hebrews. Two and one-half credits.

Daily, 9:00. Room M 318.

Vickers

168. The Novel. A study of typical English, American, and French novels to discern the qualities which make a novel great. Two and one-half credits. Daily, 12:30. Room 360 Main.

SPEECH

116. Fundamentals of Play Production. An especially desirable course for those who are interested in directing, acting, or in the appreciation of drama. The course considers the elements of a play; play classification and selection; types, styles, and schools of the drama; fundamental principles of scenic design and construction, stage lighting, costuming; equipment organization, and management of the stage. Lectures, required readings, and practical work in connection with the productions of the department are included. A complete production book is required of the student as he applies each phase of the course to an individually chosen play. Crew laboratory is required. Four credits.

Lecture daily, 10:00. Crew M.W.F. at 2:30 to 4:30. Studio theatre, Main building.

Wallace A. Goates

2. Oral Interpretation. Oral interpretation of the printed page. The aim of this course is to develop the student's ability to appreciate intellectually and emotionally any piece of good literature, and to interpret it so that others will also appreciate it. Readers and students of literature particularily, will find this course enlightening. Class enrollment is limited. Two and one-half credits.

Daily, 9:00. Studio theatre, Main building. Wallace A. Goates

ENGINEERING AND MECHANIC ARTS

Ray B. West, Professor Aaron Newey, Associate Professor A. H. Powell, Associate Professor D. A. Swenson, Assistant Professor Sidney R. Stock, Assistant Professor S. R. Egbert, Assistant Professor

(Courses offered:

June 6—June 17—Radio—Farm Machinery—Machine Work. June 20—July 1—Elementary Auto Mechanics—Leather Work, Wood Finishing—Wood Turning.

July 5—July 15—Cold and Sheet Metal—General Woodwork.

Each of the above courses will occupy the full time of the student during the period named except in the wood-working department where two occurses may be taken. The registration fees are named on page 8.

AUTO MECHANICS

Professor Powell

MMA 1. Automobile Repair and Adjustment. A course for beginners. This cicourse is a thorough study of the design and construction and function of tithe various units and parts of the automobile, with special reference to gas elengine principles and the mechanism involved. June 20 to July 1. Eight bhours a day. Three credits. Lecture and Laboratory. AAE 15. Farm Machinery. A complete assembling, adjusting, care, and

repair of the various types of farm implements and farm machinery. June 6 too June 17. Eight hours a day. Three credits. Lecture and Laboratory.

RADIO

Professor Stocks

1724. Radio Receiving Sets. June 6 to June 17. The course will be compbleted in two weeks of 8 hours a day. Students taking the course will be reequired to have, or to purchase their own special tools. The parts and mnaterials used must be paid for by the student and become his individual poroperty. The laboratory fee covers the cost of material used.

The course covers the fundamental principles of radio reception and the opperation of radio receivers. The laboratory work will include the building annot proper installation of antennas and the building of radio receivers. During the course each student will build a one, two, three, four, and a five tuube receiver, also one short wave receiver. These receivers will be built from tested circuits and successful operating models. The course will not be given for fewer than five students. June 6 to June 17, eight hours a day. Three credits. Lecture and Laboratory. Laboratory fee \$9.00.

MACHINE WORK

Professor Newey

MA 54. **Machine Shop Practice S. C.** This course consists of practice on the engine lathe, drill press, and the use of the common machinist hand tools. June 6 to June 17. Eight hour a day. Lecture and Laboratory. Three credits.

FORGING AND GENERAL BLACKSMITHING

Professor Egbert

MA 132 Cold and Sheet Metal.

(a) Ornamental Metal Work. The bending, twisting, shaping of iron into such projects as jardinere stands, kitchen stools, lamp stands, etc.

(b) Filing, hack-sawing, drilling, cutting threads, grinding drill bits, etc. Examples of projects: bending tools, rivet sets,

soldering coppers.

(c) Making flux, tinning copper, soldering, laying out and forming of such projects as cooky cutter, sugar scoop, funnel, dust pan, etc. July 5 to July 15. Eight hours a day. Three credits.

WOODWORK AND LEATHER WORK

Professor Swenson

MA 168 Harness Repair for Senior High School Teachers. A course designed to meet the needs of teachers in Smith-Hughes work. Projects in leather and rope work. June 20 to July 1. 8:00 to 11:00. One credit. MA 169 Wood Finishing. The use of water, oil, and spirit stains; paint, primers and fillers; rubbing and polishing. June 20 to July 1. 1:00 to 5:00.

One and one-half credits.

MA 170 Wood Turning. Turning original designs including finishing-staining, and polishing. June 20 to July 1. 1:00 to 5:00. One and one-half

credits.

General Woodwork. Students may choose from any of the courses in woodwork listed in the general catalog except the courses listed above. July 5 to July 15. 8:00 to 11:00 and 1:00 to 5:00. Three credits.

GEOLOGY

William Peterson, Professor Reed W. Bailey, Associate Professor

3. Elements of Physical Geology. This course is planned essentially to acquaint the student with his physical environment. A study will be made of valleys, rivers, mountains, lakes, water falls, volcanoes and other topographic phenomenon, and the processes which have produced them. Two and one-half credits.

Daily at 9:00. Room M 283. 105. **General Geology—Physical.** A study of the materials making up the earth's crust, their arrangement and origin. Also a study of the dynamic tagents, such as wind, running water, moving ice, volcanoes, etc., which coperate upon the earth and modify its outer portion. Five credits. Will mot be given for fewer than eight students.

Daily, 7:30 and 9:00. Room M 283.

HISTORY

Joel E. Ricks, Professor

11, 111. European History. Middle Ages. The basic features, ideas, and iinstitutions of the period from the fall of Rome to the Renaissance will be temphasized. Two and one-half credits.

Daily, 8:00. Room 314 Library Bldg.

Ricks

1151. **United States History.** The Colonial Period. A survey will be made of the beginnings of colonization in the United States. Special emphasis will be given to the background of the constitution. Two and one-half credits.

Daily, 9:00. Room 314, Library Bldg.

Ricks

HOME ECONOMICS

Johanna Moen, Professor Christine B. Clayton, Professor Jean Cox, Professor Elsa B. Bate, Assistant Professor Frances Kelly, Instructor

1. Elementary Clothing. A service course for students who do not intend to make Textiles and Clothing their major. Emphasis on the relation of personality to dress through the study of Art principles applied to clothing construction; pattern study, selection and construction of dresses to fit into the summer and fall wardrobe. Outside work required. Three credits.

Lect. and Lab. Daily, 12:30 to 2:30. Room H 33. Moen

35. Food and Nutrition—Infant and Child Nutrition. A course in the nutrition of young children. A study of the food requirements and principles underlying these, and the nutritional disturbances of infancy and early childhood. This course offers laboratory work in planning diets with practical application in serving the noon lunch for the children in the Nursery School. Two and one-half credits.

Daily, 9:00. Laboratory, 11:30 a. m. to 1:30 p. m. for one week. Week to be arranged. Room H 26.

55. Children's Clothing. A study of styles, material and decoration suitable for different ages of children. Construction emphasizing comfort, beauty, convenience and self-help for the rapidly growing child. Two credits.

Daily, except Friday, 2:30 to 4:00. Room H 33.

Moen

123. Problems in Organization and Presentation of Home Economics Subjects. For teachers of home economics who wish to plan or organize their courses of study along newer lines of procedure. Special problems in curriculum building will be assigned to fit the individual teacher's need. The second two weeks of this course will be given under 224. Two and one-half credits.

Daily, 10:00. Room H 12.

Bate

131. **Child Development.** This course is planned for senior women desiring special work in child care and high school teachers wishing to incorporate units in child development in their home economics courses. The laboratory work will be given in a well equipped nursery school housed in the Home Economics Building. Two and one-half credits.

Lecture, M.W.F. 8:00. Laboratory hours to be arranged. Room H 26.

Rate.

149. Home Economics—Household Management. An application of the principles of scientific management in the home, giving special emphasis in the phases of managerial ability, the use of time and energy; selection, operation, arrangement and care of household equipment; management of the family income, together with family and community relationships. Two and one-half credits.

Daily, 1:30. Room H 26.

Kelly

150. Home Economics—Residence in Home Economics Cottage. This course affords an opportunity for senior and graduate women to live in the home management house in a group for a period of time, to assume the responsibilities involved in managing a home.

Reservation for residence in the house should be made at an early date through the Home Economics Department. Three credits. Time to be arranged. Home Economics Cottage.

- 190. **Special Problems.** Arranged for advanced students in Textiles and Clothing. Working out problems of special interest, readings and reports. Time and credit to be arranged.
- 224. Curricular Activities in Home Economics Education for Smith-Hughes Teachers. A study will be made of recent developments in the field of Home Economics Education with special emphasis upon instructional units suited to the needs of junior and senior high school students. Assignments will include curriculum building in this field. Evaluation and need for home projects fill be made. Development of short units of instruction for adults will be assigned for those especially interested in this field. Two credits. June 20 to July 1.

Daily, 10:00 and 1:30-3:30. Room H 26.

Miss Cox and the Home Economics Staff

Note: In case the course in Elementary Clothing does not materialize, 160 Advanced Problems in Clothing may be given.

MATHEMATICS

V. H. Tingey, Instructor

30. Secondary Algebra. This course will meet the prerequisite to College Algebra. Five credits. Daily, 9:00 to 11:00. Room E 205

35. College Algebra. Five credits. Time to be arranged.

Descriptive Astronomy. This is a non-mathematical course which at-50. tempts to explain some of the elementary facts of astronomy. Two and one-half credits. Time to be arranged.
75. Statistics. This is a first course in Statistics and lays the foundation

for all future work in the field of Statistics. Five credits. Time to be ar-

ranged.

MODERN LANGUAGES

Frank R. Arnold, Professor

French 1a. Grammar and Conversation. Two and one-half credits. Daily, 8:00. Room N 316. Arnold

French 1b. Reading and Games. Two and one-half credits. Daily, 12:30. Room N 316.

Arnold

150. Modern Language. European travel. Lectures on travel in Great Britain, France, Switzerland, Italy and Germany. Students do much outside reading. The course is of especial value to teachers of English literature. history and geography as well as to those planning an European trip. Two and one-half credits.

Daily, 10:00. Room, N 316.

Arnold

MUSIC

N. W. Christiansen, Assistant Professor A. R. McAllister, Professor

Associated

William Spicker, Violin S. E. Clark, Piano Frances Winton Champ, Piano Mrs. N. W. Christiansen, Piano A. L. Farrell, Voice Luella Ward Hathcock, Piano

Note: Mr. McAllister's classes will be conducted the first three weeks only. Courses 175, 176 and 177 will be given the first two weeks and courses 178, 179, and 150 the third week.

175. Methods and Conducting. Rehearsal of All-State High School band conducted by band directors. Material and methods of teaching bands will be emphasized. Each director will receive assistance in his method of conducting. The band will be augmented by the directors who wish to play. One credit.

Daily, 9:00. Room 152 Main.

McAllister

176. **Problems of the Bandman.** A round table discussion of problems arising in the rehearsal. Also problems peculiar to different communities. The merits of the music played will receive consideration. One credit.

Daily, 10:00. Room 133 Main.

McAllister

177. Concert Rehearsal. Concert rehearsal of the All-State Student Band on music selected for a demonstration program, showing what should be accomplished in a given time by qualified students. Furnishes an observation course for directors. One credit.

Daily, 1:30 to 3:30. Room 152 Main.

McAllister

178. Organization and Government of Bands. Organization within the band, student officers, and relation of the band to the school and community. How to secure the best in cooperation. One-half credit.

Daily, 9:00. Room 133 M.

McAllister

179. The Marching Band. Its importance; how to secure the best results for all phases of band work. Includes a short course in Drum Majoring. One-half credit.

Daily, 10:00. Room 133 Main.

McAllister

180. **Problems in Group Work.** The advanced methods of teaching band music in the schools to individuals, small groups, large groups, and ensembles. Best material for this work will be given. One-half credit.

Daily, 1:30. Room 133 Main.

McAllister

152. **Music Appreciation.** Studied from three points of view: form, history, and biography. A course of general information in music history and appreciation. Two and one-half credits.

Daily, 12:30. Room 130 Main.

Christiansen

158, 161. Harmony. A class to include those who have had no previous work in harmony as well as those who have taken elementary courses. Attention will be given to individual needs. Two and one-half credits.

Daily, 10:00. Room 130 Main.

Christiansen

166. **Methods in Teaching String Instruments.** Detailed instruction will be given on this important group of orchestral instruments. The violin, viola, cello and bass violin will be used in this work.

Daily, 3:30. Two and one-half credits. Room 133 Main.

Christiansen

PHYSICAL EDUCATION

W. B. Preston, M. D., Professor
B. W. Bierman, Professor
E. L. Romney, Director of Athletics
Katherine C. Carlisle, Associate Professor
G. Ott Romney, Professor
Vadal Peterson
Olga Carlson, Director Girl Scout Activities
Schubert Dyche, Professor
H. B. Hunsaker, Instructor

11. **Elementary Gymnastics.** This course is given for male students who are desirous of working up their Physical Education requirements for graduation. It will include gymnastic exercises, and physical activities of all kinds, such as swimming and tennis. One credit.

Daily, 10:00. Men's Gymnasium.

Hunsaker

33. Natural Dancing—Women. Dancing based on natural movement with opportunity for music interpretation and pantomimic dancing. One credit. Daily, 8:00. Women's Gym.

Carlisle

54. Social Dancing—Men and Women. A study of the latest forms of waltz, fox-trot, drag, and tango. No previous knowledge of dancing necessary. One credit.

Daily, 1:30. Women's Gym.

Carlisle

65. Clog, Athletic, and Character Dancing—Men and Women. A study of simple clog, tap and folk technique, and dancing. Material is especially adapted to teaching boys and girls in grades 4 to 9. One credit.

Daily, 9:00. Women's Gym.

Carlisle

72. Theory and Practice of Play.—Men and Women. A study of the physical and mental abilities of the child at different age levels; of the selection and presentation of graded play material adapted especially to elementary school teaching. Two credits.

Daily, 10:00. Room 27, Gym.

Carlisle

75-a. Recreative Games.—Men and Women. A course dealing with games and sports for recreative purposes. This course is designed to meet the need of students who wish to become acquainted with Tumbling, Archery, Volleyball, Tennis, Soccer, Speedball, Swimming, Athletic Tap Dancing, and games. One credit. Gymnasium.

Daily, 8:00.

Hunsaker

75-b. Rrecreative Games. Students who desire to take recreative games for teaching purpose register for 75-b. In addition to participating with the class they will be required to keep a journal and attend two laboratory periods each week. Two credits. Gymnasium. Hunsaker

Daily, 8:00.

76. Advanced Gymnastics. Methods of conducting class instruction in posture training, class corrective work, marching, gymnastic drills. light apparatus, heavy apparatus, group games. tumbling, pyramids, athletic dancing, etc. Two credits.

Daily, 9:00. Gymnasium.

Hunsaker

85. Girl Scout Leadership. This course will be run as a troop using patrol system and court of honor, the distinctive Girl Scout way. The program material, including games, songs, dramatics, woodcraft, and other Girl Scout techniques, will demonstrate that scouting is fun. This course will be of special value to students contemplating either professional or volunteer recreational leadership. One credit.

Daily, 3:00 to 5:00. Week of July 11. All students who take this course

must pay a special registration fee of \$1.00.

Daily, 2:00 to 4:00. One credit.

Carlson

93. Swimming-Women. A course for beginners, including elementary strokes and diving. One credit. Carlisle Daily, 12:00.

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

120-B Basket-ball Coaching. June 6 to 10, inclusive.

E. L. Romney, Vadal Peterson, and G. O. Romney

120-E Football Coaching. June 6 to June 10. Daily, 7:30 to 11:30. One rcedit.

Bierman

120-F Treatment of Athletic Injuries. June 6 to 10 inclusive. Daily, 4:00 to 5:00. One-half credit.

Dyche

Physical Education Curriculum for High Schools-Men and Women. A study of the organization and administration of a natural program of sports, Dancing, Games, Swimming, etc. for Junior and Senior high schools. This course is designed to meet the needs of Intramural Athletics... Daily, 1:30. Room 27, Gym. Two credits.

Hunsaker

PHYSICS

F. L. West, Professor

20, 21, or 22, General Physics. Five credits. Lecture Daily. Lecture 10:00 and 12:30. Laboratory 1:00 to 4:00. Widtsoe Hall.

PHYSIOLOGY AND PUBLIC HEALTH

E. G. Carter, Associate Professor Maud A. Brown, Professor

4. Anatomy and Physiology. A study of the structure and functions of the body. Five credits.

Daily, 8:00 and 9:00. Room 132 Main. Carte

15... Health Education. Lectures and reading assignments covering the outstanding problems of organization, administration, supervision, and instruction (both method and subject matter) of the public school health program. Two and one-half credits.

Daily, 10:00. Room 132 Main. Brown

107 **Physiology.** An advanced course in special phases of physiology. Two and one-half credits.

Daily, 7:00. Room 132 Main.

Carter

130 Special Problems in Health Education. This course will be conducted on the seminar plan. Each member will select a topic of fundamental importance and carry on continuous research, with conferences, through the course. Frequent progress reports will keep the group as a whole in touch with the work of each member. The topics will be selected to cover the entire field as comprehensively as possible. Two two hour meetings and one conference period. Two and one-half credits.

Daily, 1:30 to 3:30. Room 132 Main.

Brown.

SOCIOLOGY

Joseph A. Geddes, Professor Caroline M. Hendricks, Assistant Professor

70. Principles of Sociology. The foundations of sociology are studied in order that a plan of social progress may be formulated. The problems of social origins, social structures, public opinions, social organization, and societal evolution are considered. Two and one-half credits.

Daily, 9:00. Room M 204.

Mrs. Hendricks

171. Social Problems of the Family. In this course the position of the family in a rapidly changing economic world is considered. Relations with outside groups, agencies and institutions are stressed. Home life is treated as a changing, developing, relationship with such agencies and as a cooperative undertaking between members. Two and one-half credits.

Daily, 10:00. Room M 204.

Mrs. Hendricks

ZOOLOGY AND ENTOMOLOGY

W. W. Henderson, Professor I. Sedlev Stanford, Assistant Professor

- 120. Animal Ecology. A study of animals in their haunts and homes, and a consideration of adaptation to environment. This course will be based on animals found on field excursions to representative environments near Logan. Junior College students with adequate preparation may take this course. Two and one-half credits. Lectures M. W. F., 2:30; field trips or laboratory T. Th. 2:30 to 5:30. Room 227 Main. Henderson
- 102. Systematic Entomology. The structure of insects is studied sufficiently to enable the student to use keys employed in classification. Each student must collect, mount, and properly identify a representative collection of insects found in the vicinity of Logan. Two and one-half credits. Graduate credit may be allowed for this course. Time to be arranged.
- 118. Heredity and Eugenics. A brief study of the laws and principles which govern heredity as shown by experimental breeding and cytology and some of the more important human applications. Two and one-half credits.

Daily, 9:00. Room 227 Main.

Henderson

- 121. Ornithology. A general survey of the class Aves (birds). Their history, classification, structure, habits and distribution will be discussed and considerable attention will be given Utah and local birds. Two and one-half credits. Lectures M. W. F., 1:30; field trips or laboratory M. W. 2:30 to 5:30. Room 227 Main.
- Organic Evolution. A critical study of the facts of evolution as obtained from a careful study of comparative anatomy, embryology, geographical distribution, blood tests and other fields upon which the doctrine of evolution is based. Factors causing evolution will be considered and discussions will be undertaken on other bodies of related thought. Prerequisite, some thorough course in biology. Two and one-half credits.

Daily, 10:00. Room 227 Main. Henderson

- 201. Zoological Research. The student who wishes to engage in some line of original research and is qualified to do so may elect and study some topic from eugenics, ecology, morphology or other branch of zoology. Open to undergraduate students only by special arrangement with the department. Thesis required. Hours to be arranged.
- 210. Entomological Research. Students may select or will be assigned certain problems dealing with different phases of entomology. The amount of credit will depend on the nature of the problem and the time spent. Thesis. Open to undergraduates only by special permission. Prerequisites: Entomology 13, 14, and 102. Hours to be arranged. Staff

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