

PRELIMINARY ANNOUNCEMENT OF EDUCATIONAL WORK FOR 1922-23.
U. S. Department of Agriculture

The lectures will start with the week beginning October 16. Each course will consist of two lectures per week, at 4:30 P.M., unless otherwise arranged. The tuition will be \$25.00 per year per course or \$15.00 per term. Of the courses outlined and others suggested by the preliminary registration it will probably be possible to offer ten or twelve of those indicated as most desired. Many standard graduate institutions have indicated their readiness to grant credits for these courses and four students have already used these credits for advanced degrees.

--GENERAL COURSES--

The course in Elementary Statistics will be a beginner's course very similar to that offered last year. The course in Statistical Work will continue the work for those students who had the elementary course last year or others similarly qualified. The Elementary Agricultural Economics followed by work in Marketing and Distribution is primarily intended for those who have not had adequate college training in these subjects. Dr. Taylor needs no introduction to Department workers. Mr. Schoenfeld comes to us fresh from Harvard and Mr. Tenny's training and long experience are well known.

The "Elementary Work in Writing" followed by the "Technical Agricultural Writing" by Mr. Marquis should be valuable courses to the many of the Department workers who wish to improve their ability of expression and master the technique of agricultural journalism. Mr. Marquis was formerly connected with the journalistic work in the University of Wisconsin and has had long experience in editorial work with the Country Gentleman.

Miss Ellen Hedrick, who will give a course in Library Science, comes to the Department from the teaching field and will no doubt offer very valuable work to those wishing to become familiar with Library Science or to Department workers who wish to increase their ability to efficiently use the literature of their subjects.

Dr. Hitchcock was formerly Professor of Botany at the Kansas Agricultural College and is a botanist of international reputation. He will give a broad fundamental course in the principles and practices of Taxonomic Botany.

--ADVANCED COURSES--

Dr. W. A. Patrick of Johns Hopkins University has already promised to give us a course in Physical Chemistry of the Colloids, and the Department is especially fortunate in obtaining Dr. Patrick's services. This is expected to be one of the outstanding courses of the year and should interest scientific workers in many lines.

Major Hitchins has promised to give us a broad course in Infection and Immunity. Dr. Hitchins has had long experience in teaching in the Army Medical School and is recognized as an authority on these problems. The fundamental problems discussed should interest workers in all lines of biological science. The intricate relations involved and the methods of their differentiation should give extremely helpful suggestions to be applied to the solution of widely different problems.

The course in Plant Breeding is expected to supplement the work in Genetics of last year, to be followed by a course in Animal Breeding the following year. Dr. Leighty has been suggested as the leader in this work and other specialists will assist in their respective fields.

The course in Advanced Economic Theory followed by the course in Land Economics are intended for advanced graduate students of economic science. The corps of instructors suggested insures the high standing and value of these courses. Dr. Ely will be in Washington the second half of the year and will no doubt materially contribute to the success of these courses.

Dr. Humphreys' course on "Physics of the Air" needs no commendation. Dr. Humphreys' book is the outstanding text on the subject and the Doctor brings every added factor of experience to its consideration.

There is hardly a line of scientific activity in the Department in which broad and fundamental courses, such as the above, as well as contact with authorities in special lines, would not be extremely helpful and highly acceptable in any graduate institution.

SUGGESTED COURSES FOR THE YEAR 1922-23.

General and Review Courses

Elementary Statistics Including Graphics. Mr. Haas.

Statistical Methods. Mr. Tolley. (Open to those who have had the elementary course or its equivalent.)

Elementary Agricultural Economics (First Half). Dr. Taylor. Mr. Stewart.
Marketing and Distribution of Agricultural Products (Second Half). Mr. Schoenfeld. Mr. Tenny.

Principles of Writing (First Half). Mr. Marquis.
Technical Agricultural Writing (Second Half). Mr. Marquis, et al.

Library Science. Miss Ellen Hedrick. (Cataloging and classification. Bibliographic and reference work.)

Taxonomic Botany. Dr. A. S. Hitchcock.

Advanced Courses

Physical Chemistry of the Colloids. Dr. W. A. Patrick of Johns Hopkins University.

Infection and Immunity. Major A. Parker Hitchens. (Army Medical School).

Plant Breeding. Dr. Leighty, et al. (Practical application of the laws of heredity to plant breeding.)

Advanced Economic Theory (First Half). Dr. Taylor. Mr. Stewart.
Land Economics (Second Half). Dr. Gray, Dr. Baker, Dr. Ely, et al.
(Graduate courses discussing important economic theories).

Physics of the Air. Dr. Humphreys. (Given in connection with the George Washington University.)

TENTATIVE APPLICATION FOR INSTRUCTION
(Formal application to be made later)

Name _____ Bureau _____

Courses desired in order of preference _____

Courses desired but not listed above _____

Are you a college graduate? _____

Graduate work completed or advanced degrees? _____

To be returned to the Office of the Director of Scientific Work before
October 3, 1922.

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UNITED STATES DEPARTMENT OF AGRICULTURE
ANNOUNCEMENT OF EDUCATIONAL WORK FOR 1922-1923.

Classes will start on the designated days in the week beginning Monday, Oct. 16, 1922. Year courses will run for 30 weeks; half-year courses for 15 weeks.

Registration will be at the office of the Director of Scientific Work. Tuition for one full-year course or two half-year courses taken in the same year will be \$25.00 of which \$15.00 is payable at time of registration and \$10.00 at the beginning of the second half-year. For a half-year course the tuition will be \$15.00, payable in advance.

Credit towards graduate degrees has been allowed for last year's courses by a number of standard graduate institutions and many others have signified their willingness to accept them when offered. Students desiring graduate credit should file a statement of their educational training and experience.

- (A) GENERAL COURSES -

1. Elementary Statistics (Yr.).- Mr. G. C. Haas. Mon. and Thurs., 4:30 P.M., 411 Bieber Bldg. Statistical units of measurement, variables, frequency distribution, classification and tabulation, types of averages, dispersion, accuracy and interpolation, sampling, index numbers, graphic presentation and analysis, logarithmic curves, and correlation.

2. Principles of Writing (1st Hf.).- Mr. J. Clyde Marquis. Tues. and Fri., 4:30 P.M., 411 Bieber Bldg. A review of the fundamental principles of rhetoric, with special reference to construction of paragraphs, outlining articles and bulletins, assembling, selecting and arranging material, clearness of expression, feature writing, editing, and correspondence. Lectures and round table discussions. (To be followed by 2b, "Technical Agricultural Writing", second semester.)

3. Elementary Agricultural Economics (1st Hf.).- Dr. L. C. Gray. Tues. and Fri., 4:30 P.M., 703 Bieber Bldg. A study of economic principles governing agricultural production. Selection of farm enterprises, size of farm, proportion of the factors of production, analysis of costs, methods of analyzing farm income, economic aspects of farm equipment, machinery and power, land utilization, tenure and policies; agricultural labor and wages, agricultural credit, and prices. (To be followed by 3b, "Marketing and Distribution of Agricultural Products", second semester.)

4. Advanced Statistical Methods (Yr.).- Mr. H. R. Tolley. Tues. and Fri., 4:30 P.M., Room 305, Farm Management. The development and application of the theory of statistics. A study of correlations, curve fitting, the theory of sampling, and their applications. Yule's "Introduction to the Theory of Statistics. Prerequisites: Elementary work in statistics and algebra through simultaneous equations.

5. Library Science (Yr.).- Miss Ellen Hedrick. Tues. and Fri., 4:30 P.M., Reading Room, Library, Bieber Bldg. Cataloging and Classification, Bibliography and Reference Work. Am. Library Assoc. catalog rules, the Library of Congress classification, the Dewey Decimal, and other classifications. National and trade bibliographies, subject bibliographies, and public documents. Open to college graduates or those having library or related training.

6. Taxonomic Botany (Yr.).- Dr. A. S. Hitchcock. Tues. and Fri., 4:30 P.M., Room 223 East Wing. This course will consist of (a) Identification of plants including local flora, economic species and foreign material, use of manuals and floras, study of

descriptions and specimens; (b) Taxonomic technique, including a discussion of classification; species and general, use of bibliographies and indices, synonymy.

- (B) GRADUATE COURSES -

7. Physical Chemistry of the Colloids (Yr.).- Dr. W.A. Patrick of Johns Hopkins University, Wed., 4:30 P.M., 2nd hour to be arranged, Room 223 East Wing. A discussion of the theory of solutions, molecular kinetic theory, simple thermodynamics, and the application of the principles involved to surface phenomena.

8. Advanced Crystallography (Yr.).-Dr. Edgar T. Wherry. Tues. and Wed., 4:30 P.M., Room 510, Bureau of Chemistry. The course is designed to present modern theories of crystal structure and their chemical significance, to aid in the reading and understanding of current articles on X-ray crystal structure, and to give practice in the measurement and drawing of crystals using the modern two-circle methods.

9. The Principles of Physical Chemistry (Yr.).-L.H. Adams, Mon. and Wed., 4:00 P.M. Fixed Nitrogen Research Laboratory. A standard university course in physical chemistry covering the phenomena discussed in Washburn's "Principles of Physical Chemistry".

10. Infection and Immunity (Yr.).-Dr. A. Parker Hitchens, Major M.C. U.S.A. Mon. and Thurs., 4:30 P.M., Room 223 East Wing. Theories and principles of infection and immunity. A study of the infectious agents, their mode of attack; the body defenses; artificial immunity; biological tests for infection and immunity; anaphylaxis and allergy. To be followed by a detailed consideration of the more important diseases, with emphasis upon their immunological characteristics. Reference Texts: Zinsser, Infection and Resistance; Kolmer, Infection, Immunity and Specific Therapy.

11. Plant Breeding (Yr.).-Dr. C.E. Leighty, et. al. Wed. and Fri., 4:30 P.M., Room 104, Cereal Investigations. (1) The development of plant breeding; (2) fundamental principles; (3) their application to the art of plant improvement. Mass selection, pure-line selection, bud selection, hybridization, including the theory of heterosis, and the technique of practical and experimental plant breeding. Seminars will be held, and specialists will discuss special problems.

12. Advanced Economic Theory (1st Hf.).-Dr. H.C. Taylor and Dr. C.L. Stewart. Mon. and Thurs., 4:30 P.M., Room 305, Farm Management. Open to graduate students and persons who have read extensively in economic literature. A review of important economic theories and their application to present day problems. A critical study of the principal schools of economic thought, such as the English Classical School, the German Historical School, and the Austrian Psychological School. (To be followed by 12b, "Land Economics", second semester.)

13. Physics of the Air (Yr.).-Dr. W. J. Humphreys. Registration for the course is through the George Washington University; time, as arranged; place, Weather Bureau; textbook, Humphreys' "Physics of the Air."

14. Special Research Courses. Arrangements may be made for carrying on research in any field of the Department's work under direction of specialists and supervised by the Graduate Committee. Time and credit as arranged; no fee is charged.

In addition the Bureau of Standards is offering a course in Advanced Organic Chemistry by L. L. Steele on Tuesdays and Thursdays that is open to Department workers.