

COURSE IN AGRICULTURE

FRESHMAN YEAR	SOPHOMORE YEAR	JUNIOR YEAR	SENIOR YEAR
REQUIRED	REQUIRED	REQUIRED	REQUIRED
Elementary Algebra Grammar and Composition Book-keeping Rhetoric Physiology Geometry Botany Breeds and Breeding	Geometry Trigonometry Surveying Botany English Literature General History Chemistry Horticulture Forestry and Landscape Gardening	Agricultural Chemistry and Economic Botany, or Analytical Geometry and Calculus Physics Zoology Entomology History of Civilization Constitutional Law Stock Feeding	Astronomy Political Science Meteorology Psychology English Literature Mineralogy Ethics Geology Soils and Crops
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
Free-hand Drawing Shorthand and Typewriting Music Rural Economy Wood Carving	Dairy Husbandry Drawing Veterinary Science Shop Work	Veterinary Science Farm Equipment Dairy Husbandry Horticulture	History of Agriculture International Law Veterinary Science

COURSE IN DOMESTIC ECONOMY

FRESHMAN YEAR	SOPHOMORE YEAR	JUNIOR YEAR	SENIOR YEAR
REQUIRED	REQUIRED	REQUIRED	REQUIRED
Elementary Algebra Grammar and Composition Book-keeping Rhetoric Physiology Geometry Botany Household Economy	Geometry Latin, or Trigonometry and Surveying Botany English Literature General History Chemistry Cooking Special Hygiene	Latin, or Chemistry and Economic Botany Physics Zoology Entomology Constitutional Law History of Civilization Sewing Household Sanitation	Latin or Astronomy Political Science Meteorology Psychology English Literature Mineralogy Ethics Geology
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
Shorthand and Typewriting Music Wood Carving Free-hand Drawing Floriculture	Music Wood Carving Drawing Shorthand and Typewriting Landscape Gardening	Music Wood Carving Drawing	Music Pastry and Fancy Cooking Fancy Sewing

COURSE IN APPLIED SCIENCE

For admission to this course a thorough knowledge of Arithmetic, Algebra, Geometry, Elementary Chemistry and Physics, United States History and English Grammar is required. Students deficient in any of the above requirements may enter on condition that they pass an examination on the subject in which they are deficient, before entering the second year.

CLASS-ROOM STUDIES

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Trigonometry Analytical General Chemistry Qualitative Analysis English Descriptive Geometry Book-keeping	Calculus Chemical Physics Chemical Philosophy Physics Quantitative Analysis Crystallography Theoretical Mineralogy Civil Engineering Boilers	Mechanics Mineralogy Lithology Stresses in Structures Mining Engineering Mechanical Engineering Geology Metallurgy	Railroad Engineering Lithology Economic Geology Stresses in Structures Ore Dressing Hydraulic Engineering Applied Chemistry Sanitary Engineering Heating and Ventilation Graphical Statics Assaying

PRACTICAL WORK

Qualitative Analysis Shop Work Mechanical Drawing	Quantitative Analysis Crystallography Blowpipe Analysis Free-hand Drawing	Mechanical Drawing Surveying Blowpipe Analysis Determinative Mineralogy	Petrography Railroad Surveying Assaying Graphical Statics Engineering Designing
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COURSES IN AGRICULTURE AND DOMESTIC ECONOMY

AGRICULTURE

PROF. LUTHER FOSTER
BREEDS AND BREEDING

In this department of the College, the student takes up during the Freshman year, a study of the most prominent breeds of domestic animals that have been introduced into the United States. Their origin, the history of their development, their characteristics, points of merit and defect, and their uses and adaptability to climate are treated, special attention being given to those breeds best suited to the wants of our own State. Curtis' treatise on "Horses, Cattle, Sheep and Swine" is used as a basis for the work, and is supplemented by lectures and observations of the animals themselves among the different breeds as far as practical.

The principles of breeding, the laws of heredity, causes of variation, the formation of breeds, value of pedigree, atavism, crossing, the selection of breeding stock and many other topics relating directly to this important subject are considered.

STOCK FEEDING

A portion of the Junior year is devoted to the Principles of Animal Feeding, in which the composition

and requirements of animal bodies, the chemical composition of foods necessary to supply these wants, the general law of animal nutrition and the chemical action and values of the different kinds of foods are discussed. The German Standard rations are given thorough study, special work being done in compounding Montana foods. The student figures out the nutritive ratios, showing in what proportions they may be used to make properly balanced rations for the different purposes of feeding, without the loss of more than a small per cent. of any of the nutrients. A consideration of the proper foods for each class of animals whether fed for labor, growth, milk or meat production is made prominent. The progress and results of the feeding experiments at the various Agricultural Experiment Stations are also carefully reviewed and discussed.

SOILS AND CROPS

One term of the Senior year is given to the study of soils and fertilizers, the history and cultivation of the cereal crops, the value of a rotation of crops, and the most approved schemes of rotation, special and local crops, comparison of the different branches of Agriculture and the general subject of farm economy, including the structure, selection, use and care of farm tools and machinery.

ELECTIVES

In addition to the above the following subjects are offered as electives in different terms of the course: Rural Economy and Law, Dairy Husbandry, Farm Equipment, and History of Agriculture.

HORTICULTURE

S. M. EMERY, DIRECTOR

HORTICULTURE

Instruction in Horticulture is given largely by practical operations in the nursery, garden and orchard, such as pruning, grafting, budding and making cuttings and layers.

The study of fruits includes the following topics: Methods of propagation, preparation of ground, cultivation and after treatment, winter protection, storage and marketing, hybridization and origination of new varieties, diseases and their remedies.

Vegetables are considered in the same general way. The history and peculiarities of individual varieties are studied and also the best methods employed in their cultivation. The aim is to cover all parts of the subject of Horticulture.

FORESTRY

The consideration of this subject includes not only a study of various forest trees and their uses, but also the production and conservation of forests and forest conditions, the relations of forests and climate and the general topics of forestry legislation and economy. Instruction will be chiefly by lectures and the subject will be made as practical as possible.

LANDSCAPE GARDENING

Two exercises per week are given in connection with forestry. The location of buildings, the laying out of grounds, the making of lawns and roads, the proper grouping and distribution of ornamental trees, shrubs and flowering plants and numerous kindred topics are included in the course.

NATURAL AND PHYSICAL SCIENCES

PROF. LUTHER FOSTER

DR. F. W. TRAPHAGEN

BOTANY

This science is begun the last term of the Freshman year. The morphology of flowering plants is studied from living specimens, of which a sufficient variety are taken to prepare the student for the use of Coulter's Manual. The object sought is to study plants, using books only as a guide. The course includes a thorough study of the physiology of flowering plants, with typical forms of the lower divisions of the vegetable kingdom. An herbarium of fifty species is required from each student. One term of Economic Botany, devoted to the study of those fungus growths which are injurious to Agriculture, is offered as an elective in the Junior year.

ZOOLOGY

The following topics are presented through the aid of natural specimens, text books and lectures: Classification of animals as based on their structures and embryonic development; descriptive Zoology, comprising the systematic arrangement of animals according to natural relations and affinities; geographical distribution; habits; adaptations; perpetuation and improvement of varieties of animals. Zoology will be taught as far as possible by laboratory methods.

ENTOMOLOGY

This study embraces the anatomy, transformation, habits, classification and geographical distribution of insects, illustrated by charts, drawings and dissections made by the students themselves. The student becomes

familiar with insect life, habits and transformations, by collecting, preserving and rearing specimens of our native species. Special attention is given to economic entomology, fostering beneficial and destroying noxious insects. Particular attention is given to species injurious to vegetation, their habits and the methods of checking their ravages.

ANATOMY AND PHYSIOLOGY

Human anatomy, physiology and hygiene is regarded as one of the most important studies in the College curriculum. By means of charts, a manikin and various artificial preparations, nearly every important fact in human anatomy is illustrated. Especial attention is given to the following topics: General view of the structure and functions of the body; food and the digestive process; the blood, its chemical composition and properties; respiration; nutrition; the nervous system; the laws of hygiene.

GEOLOGY

Instruction is given by recitation, lecture and illustration in the chief rock-forming minerals; a description of the various kinds of rocks; structural geology; historic and dynamical geology; fossils; the causes which have been at work and are now working the various geological changes, aided by maps, diagrams, charts, specimens, inspections of localities and soils, and by microscopic practice in the laboratory. The course embraces lectures on the origin and nature of ore deposits; and on the composition, properties, and the geological and geographical distribution of the ores of each of the metals; mineral springs and artesian wells. Special attention is given to the geology of Montana.

METEOROLOGY

The work in this branch is confined mostly: 1st, to the study of the temperature, weight and motions of the atmosphere and the instruments and methods of

measuring them; 2nd, to the study of precipitation and the relation of climate to Agriculture. A United States weather station is maintained at the College and daily telegraphic weather predictions are received, as well as the Montana daily weather charts. These predictions and weather charts are studied by the class.

PHYSICS

A course of two terms is given in elementary physics, mostly by the experimental methods. The subjects studied includes the laws of sound, heat, light, electricity, and magnetism; the measurement of temperature and humidity; atmospheric pressure.

ASTRONOMY

The course in Astronomy aims to give not merely an application of Mathematics, but also a knowledge of the physical conditions of the universe, the laws which govern the motions of the celestial bodies and an insight into the methods by which the science has been brought to its present state.

GENERAL CHEMISTRY

DR. F. W. TRAPHAGEN

During the Sophomore year the students in the courses of Agriculture and Domestic Economy will attend lectures and recitations in General Chemistry in common with the students of the Freshman year in the course of Applied Science. They will also receive practice in Qualitative Analysis and general laboratory work.

The students in Domestic Economy will also receive lectures on The Chemistry of the Household, including the chemistry of food, cooking, laundering, etc.

During the Junior year the students in the course of Agriculture will receive a course of instruction in Agricultural Chemistry which will include: a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils, and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations—such as plowing, fallowing, draining; chemistry of plant-growth; the composition of grain and fodder plants, and their use and value as food; feeding; the chemistry of milk, butter and cheese.

HISTORY, POLITICAL SCIENCE

PROF. B. F. MAIDEN

HISTORY

This course includes two terms in General History, i. e., an outline of society in ancient, mediæval and modern times, with a special outline of the history of England, including the essential facts of the origin and development of a nation which has made the largest contribution to the liberties and literature which we enjoy and cultivate; also a term of lectures on the History of Civilization, a comparative study, which exhibits the contrasts between ancient and modern civilization, the variations in modern national development, and the causes and agencies of change and progress in European and American society.

POLITICAL ECONOMY

This subject embraces a consideration of all the relations of capital and labor, by which citizens are directed in their industrial pursuits. The history and development of the science are presented, especially as related to our own country. All partisan teaching is avoided. Current practical problems in industrial society are discussed in the light of economic principles. It is also the aim of the instructor to awaken the interest of the students in the discussion of sociology in its various aspects, and to aid them in the formation and expression of clear, sound and logical views; and to encourage them to think for themselves on all questions pertaining to individual enterprise and public prosperity.

CONSTITUTIONAL LAW

This subject embraces in a comprehensive manner a discussion of the principles involved in the government of the state, county, city and town organizations, as

well as those involved in the government of the United States. As every citizen takes part more directly in the local than in the general government, he needs to understand the power and relations of the state and municipal governments. An endeavor is also made to show not only WHAT our free institutions are, but WHY they exist, by tracing their development from the beginning of the English Constitution through the Colonial and revolutionary periods of our own country's history. The qualifications of an elector and the general rights and duties of the citizen are also touched upon.

MATHEMATICS

PROF. R. E. CHANDLER

Students in the courses of Agriculture and Domestic Economy must be prepared to commence the study of Algebra at simple equations. During the year they will complete the Algebra required; this will include the general theory of equations, embracing the principal transformations and properties, derived equations and equal roots, Sturm's theorem and the solution of higher equations. Later in the year Plane and Solid Geometry and conic sections geometrically treated will be taken up.

Students in these courses have the privilege of studying advanced mathematics as laid down in the course of Applied Science.

VETERINARY SCIENCE AND ART

PROF. *.....

It is the aim of this department to instruct the Agricultural student in that veterinary knowledge which will be of the greatest and most practical benefit to the farmer or stock-raiser, and, at the same time, to give good preparatory work to the special student who desires to continue the study of medicine in a regular Medical College.



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