

816. Special Problems in Plant Breeding and Genetics

Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 8 credits. Approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Horticulture.

Students may conduct research in a laboratory, greenhouse or field-plot on a selected subject or study selected published literature under the supervision of a faculty member.

817. Plant Breeding Methods

(FOR 823.) Fall. 3(3-0) STT 422 or concurrently. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Crop and Soil Sciences.

Methods, strategies and practices in organization and operation of plant breeding programs. Emphasis on practical application of classical, modern and futuristic approaches to plant breeding.

819. Plant Breeding Systems

(FOR 822.) Winter. 3(3-0) CSS 821, STT 422. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Horticulture.

Breeding systems for improvement of self and cross pollinated and of vegetatively propagated crops. The genetic basis for parent selection.

821. Genetic Concepts in Plant Breeding

Fall. 3(3-0) CSS 350 or ZOL 441. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Crop and Soil Sciences.

Genetic structure of plant populations, gene action, inbreeding, outbreeding, heterosis, linkage and recombination, genetic architecture of traits, genetic distance.

828. Seminar

Fall. 1(1-0)

Critical study and discussion of advanced forestry topics.

835. Silviculture

Fall. 3(3-0) FOR 305 or approval of department.

Biological basis of intensive forest management including seedling production, site evaluation and preparation, plantation establishment, intermediate stand treatments and natural reproduction methods. Field trip optional.

836. Evolution of Crop Plants

Fall of even-numbered years. 3(3-0) CSS 821 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Horticulture.

Cultural and biological aspects of evolution under domestication; origin and diversity of cultivated plants.

838. Tissue Culture for Plant Breeding

Winter of even-numbered years. 3(2-2) BOT 414, CSS 821. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Horticulture.

The application of plant cell, protoplast and tissue culture methodologies and principles to crop improvement.

840. Recreation Economics

Spring. 4(4-0) FOR 809 or approval of instructor. Interdepartmental with the departments of Park and Recreation Resources, and Resource Development. Administered by the Department of Park and Recreation Resources.

Applications of economic analysis to recreation resource problems including measurement of demand and supply, valuation of recreation resources, determination of economic impact, economic decision making and policy considerations.

850. Administering the Public Land Agency

Spring. 4(4-0) FOR 450 or approval of department.

Case studies of administrative problems in land management agencies. Students are organized as teams and prepare team reports on specified aspects of each case.

855. The Research Process in Natural Resources

Fall. 3(3-0) Approval of department. Interdepartmental with and administered by the Department of Resource Development.

Research and decision processes as applied in natural resource investigations. Research organization and applications of research results. Oriented to management, social science, and policy studies. Preparation of project proposals.

881. Urban Internship

Fall, Winter, Spring, Summer. 9 credits. Open only to Forestry-Urban Studies Master's students. Approval of department.

Individual experience in approved institutional position related to an urban development policy area.

899. Master's Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

910. Resource Economics Proseminar

Spring of odd-numbered years. 3(3-0) May reenroll for a maximum of 9 credits. Approval of department. Interdepartmental with the departments of Agricultural Economics and Resource Development.

A seminar wherein advanced graduate students in the fields of resource economics participate with faculty in the joint conduct of a major research project in resource economics and policy.

940. Theoretical Population Genetics

Winter. 4(4-0) MTH 113, STT 422 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture.

Discussion of mathematical theories in population genetics and experimental works on natural and laboratory populations.

941. Quantitative Genetics in Plant Breeding

Spring of even-numbered years. 4(4-0) STT 423, CSS 817 or approval of department. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture. Administered by the Department of Crop and Soil Sciences.

Calculation and implication of genetic parameters. Linkage. Coancestry and inbreeding. Covariance between relatives. Heritability and selection. Genotype by environment interaction. Emphasis on relationship of quantitative genetics to plant breeding.

944. Physiological Genetics

Winter of odd-numbered years. 3(3-0) BOT 413; CSS 821. Interdepartmental with the departments of Crop and Soil Sciences, and Horticulture.

Control of variation in higher plants including adaptive physiology, quantitative genetics, growth correlation, biochemical genetics, hybrid physiology, and genecology.

960. Simulation Models in Natural Resource Management

Winter of odd-numbered years. 3(3-0) R D 855 and knowledge of FORTRAN programming or approval of department. Interdepartmental with and administered by the Department of Resource Development.

The role of simulation models in developing management strategies. Applications of computer simulation in natural resources. Modeling of decision systems in natural resources management.

976. Multivariate Methods in Forestry Research

Winter. 4(4-0) MTH 334, STT 423.

Application of multivariate techniques such as principal components, canonical analysis, factor analysis, and clustering to problems in forestry research. Case studies drawn from several forestry disciplines.

999. Doctoral Dissertation Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

FRENCH

See Romance and Classical Languages.

GENERAL BUSINESS AND BUSINESS LAW GBL

College of Business and Graduate School of Business Administration

341. Survey of Business Law

Fall, Winter, Spring. 4(4-0) Juniors. Not open to students with majors in the College of Business.

Historical development of the law; courts, court procedures and civil remedies, torts, crimes; contracts, agency, sales, negotiable instruments, real and personal property, including bailments and liens. Textbook and lecture rather than case approach.

345. Business Ethics

Fall. 4(4-0) Juniors. Interdepartmental with and administered by the Department of Philosophy.

Ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, and the law. Readings from philosophical and business sources.

400H. Honors Work

Fall, Winter, Spring, Summer. 1 to 15 credits. Approval of department.

Independent and informal study in law, office administration or business communications.

Descriptions — General Business and Business Law

of Courses

430. Law and Society
Fall, Winter, Spring, Summer. 4(4-0)
Seniors or approval of instructor.
Legal reasoning and legal institutions. Court systems and court procedures. Contracts and sales. Sources of and limits on legislative and judicial authority. Property, torts, and crimes.

431. Law and Business
Fall, Winter, Spring, Summer. 4(4-0)
GBL 430.
Law of business associations, administrative agencies and process, the constitution and the business enterprise, liability to consumers, securities, regulation of business conduct and structure, business ethics and social responsibility.

447. Hotel Law
Winter, Spring. 4(4-0) GBL 430.
Legal aspects of the hospitality industry.

450. Contracts and Business Organizations
Fall, Winter, Spring. 4(4-0)
Law of contracts, including concept of freedom of contract and limitations, agency, and business organizations, including sole proprietorships, partnerships, and corporations. Accountant's professional responsibility.

451. Commercial Transactions
Fall, Winter, Spring. 4(4-0) GBL 450.
Law of sales, commercial paper, secured transactions, negotiable instruments, documents of title, and debtor-creditor relationships.

460. International Law and Business
Spring. 4(4-0) GBL 430.
International law and its impact on international business. Government regulation of international business. Case study method.

468. Field Studies
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits. Approval of department.
Planned program of observation and work in selected business firms. Analysis and reports.

805. Business Ethics
Spring. 4(4-0) Graduate student in the College of Business or approval of instructor. Interdepartmental with and administered by the Department of Philosophy.
Ethical dimensions of such topics as corporate responsibility, preferential hiring, profit and taxation, deception and bribery, self-regulation versus government regulation, "whistleblowing", and advertising. Readings from philosophical and business sources.

848. The Legal Environment of Business
Fall, Summer. 4(4-0)
Critical examination of the environment in which business operates. Analysis of the component elements of the legal environment of business and the structural framework in which law functions.

860. Law of International Business Transactions
Spring. 4(4-0) GBL 848 or approval of department.
Law of international business transactions including a comparative study of foreign and domestic legal environments. Case study method.

878A. Seminar in Business Law
Winter. 4(4-0) GBL 848 or approval of department.

Contracts, sales, secured transactions and consumer legislation viewed from the judicial, legislative and executive vantage points.

878B. Seminar in Business Law
Spring. 4(4-0) GBL 848 or approval of department.

Agency, partnerships and corporations, viewed from legislative, judicial and executive vantage points, as they affect entrepreneurial decision making.

890. Special Problems
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits. Approval of department.

GENETICS

College of Natural Science

800. Genetics Seminar
Fall, Winter, Spring. 1(1-0) May reenroll for a maximum of 12 credits. Approval of director.

Student seminar to cover genetics subjects not considered in formal courses. Course is also intended to give students experience in reviewing and organizing literature in a subject, and orally presenting and defending the analysis.

842. Chromosome Structure and Genetics
Winter of even-numbered years. 4(4-0)
Introductory genetics course. Interdepartmental with the departments of Botany and Plant Pathology, and Zoology.

Mechanisms of mitosis and meiosis, classical and molecular genetics of chromosome structure, alterations in chromosome number and structure, transposable elements, meiotic drive.

844. Plant Organelle Genetics
Winter of odd-numbered years. 4(4-0)
BOT 856, one introductory course in each of the following: genetics, cell biology and botany. Interdepartmental with and administered by the Department of Botany and Plant Pathology.
Organization, structure, function, heredity, molecular biology and manipulation of chloroplasts and mitochondria. Biological interactions between the nucleus and organelles.

856. Plant Genetics and Molecular Biology
Spring. 3(3-0) Approval of department and a course in introductory genetics. Interdepartmental with the departments of Biochemistry, and Botany and Plant Pathology. Administered by the Department of Botany and Plant Pathology.
Recent advances in genetics and molecular biology of higher plants.

880. Special Problems
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Approval of instructor.
Students with special interests and abilities may study published literature in a selected genetics topic or they may carry on research in the laboratory on a selected subject in collaboration with genetics faculty.

890. Selected Topics in Genetics
Fall, Winter, Spring, Summer. 2 to 5 credits. May reenroll for a maximum of 9 credits. ZOL 441 and approval of instructor.

Topics will be selected from molecular genetics, physiological genetics, population genetics, quantitative genetics, evolution, radiology and mutagenesis, microbial genetics, somatic cell genetics, behavioral genetics, and human genetics.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. 3 to 12 credits. Majors.
Research for the doctoral dissertation in genetics.

GEOGRAPHY

GEO

College of Social Science

100. People, Location and Environment (S)
Fall, Winter, Spring. 4(4-0) Not open to Geography majors.

Relationships between people and environments, their spatial consequences and resulting regional structures across the earth's surface.

122. The World of Maps
Fall, Winter, Spring. 3(3-0)
Discussion of types, practical applications, and sources of maps. Map reading skills.

150. Geography of Selected Current Problems
Fall, Winter, Spring. 2(2-0)
The geographic perspective is used to examine U.S. and world problems of major concern such as international conflicts, environment quality, spatial change, and economic development.

201. Geography of Culture
Fall, Winter, Spring. 3(3-0)
A systematic discussion of cultural geography, stressing cultural processes and relationships.

203. Resource Ecology
(IDC 200.) Fall, Winter, Spring, Summer. 3(3-0) Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Resource Development, and Zoology. Administered by the Department of Fisheries and Wildlife.
Basic concepts of ecology which are the unifying basis for resource management, conservation policy and the analysis of environmental quality. Extensive use of guest lecturers.

204. World Regional Geography (S)
Fall, Winter, Spring, Summer. 4(4-0)
Human relationships with natural and cultural environments.

206. Physical Geography
Fall, Winter, Spring, Summer. 4(4-0)
Analysis of weather, climate, landforms, soils, water and biotic factors of the human environment, including its spatial, genetic, and functional interrelationships.

206L. Physical Geography Laboratory
Fall, Winter, Spring. 1(0-2) GEO 206 or concurrently.
Laboratory study of geographic aspects of map interpretation, aerial photographs, weather, climate, soils, landforms, and vegetation.