

910. Resource Economics Proseminar
Spring, 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 823 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

(830.) 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 genealogy.

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 of even-numbered years. 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.

GENERAL BUSINESS AND BUSINESS LAW GBL

(Name change effective July 1, 1984. Formerly the Department of Business Law and Office Administration.)

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.

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.

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.

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

GEN

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. 3(3-0) Approval of department. 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.

FRENCH

See Romance and Classical Languages.

**Description — Genetics
of
Courses**

856. Plant Genetics and Molecular Biology
Spring of even-numbered years. 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.

213. World Economic Geography
Fall, Winter, Spring, Summer. 4(4-0)
 Emphasis on distribution of natural resources, industries and service activities, stressing factors of location and economic concepts of locational change.

223. Introduction to Cartography
Fall, Spring. 4(2-4)
 Principles and techniques of constructing maps. Mapping methods and mapping decisions emphasized.

224. Remote Sensing: Airphoto Interpretation
Fall, Winter, Spring. 4(2-4) Sophomores.
 Use of aerial photographs in the identification and interpretation of physical and cultural features of the terrestrial environment. Includes principles of photogrammetry, and stresses application and practice.

IDC. Introduction to Contemporary China
For course description, see Interdisciplinary Courses.

IDC. Contemporary Japan
For course description, see Interdisciplinary Courses.

300. North America
Fall, Winter, Spring. 3(3-0)
 Human and physical geography of North America, north of the Mexican border.

309. Geography of Recreation
Winter. 3(3-0)
 Natural and cultural factors influencing the use of space for recreation. Emphasis on recreation land use in the United States and current problems and conflicts.

310. Historical Geography of the United States
Spring. 3(3-0)
 Reconstruction of geographies of the United States as they existed in the past.

315. South America
Spring. 3(3-0) Sophomores or approval of department.
 Regional geography of South America with special attention to contemporary geographic problems.

316. Middle America
Winter. 3(3-0) Sophomores or approval of department.
 Interpretation of physical and cultural environment of Mexico, Central America, and the West Indies. Special attention to contemporary geographic problems.

320. Geography of Population
Fall. 3(3-0)
 Relationship of the size, composition, and distribution of population to geographic variations in the nature of places.

321. Africa
Fall. 3(3-0) Sophomores or approval of department.
 Emphasis on continent south of Sahara: environments, peoples, problems, and potentials.

322. Africa: Contemporary Problems
Spring. 3(3-0) Sophomores or approval of department. GEO 321 recommended.
 Major development problems examined from environmental, historical, economic, and social perspectives.

340. Western Europe
Winter. 3(3-0) Sophomores or approval of department.
 Geographic analysis of physical and human character and resources of Western Europe (Scandinavia, British Isles, Benelux, Germany, France and Switzerland). Emphasis on major problems.

IDC. Contemporary South Asia
For course description, see Interdisciplinary Courses.

342. Eastern and Southern Europe
Spring. 3(3-0) Sophomores or approval of department.
 A geographical analysis of countries of Eastern and Southern Europe with emphasis on economic, political, social and ethnic problems.

351. Weather and Climate
Fall. 3(3-0)
 Non-mathematical treatment of general weather processes and patterns, including surface and middle atmospheric (jet stream) features, with emphasis on the U.S.

360. The Soviet Union
Fall. 3(3-0) Sophomores or approval of department.
 A geographical analysis of the Soviet Union and its inhabitants with emphasis on economic, social, political and ethnic problems.

364. Japan
Fall. 3(3-0)
 Spatial patterns and processes of Japan's physical and human geography, with emphasis on development problems of the nation, especially since 1950.

365. China
Winter. 3(3-0)
 The physical and human geography of China and their relationship to the development problems of the country, with emphasis on the post-1949 period.

400H. Honors Work
Fall, Winter, Spring. 1 to 16 credits. Approval of department.