FOOD SYSTEMS ECONOMICS AND MANAGEMENT

See Agricultural Economics

FOREIGN LANGUAGES

See German and Russian, Linguistics and Oriental and African Languages, and Romance Languages.

FORESTRY FOR

College of Agriculture and Natural Resources

IDC. *Resource Ecology and Man*

For course description, see Interdisciplinary Courses.

202. *Introduction to Forestry*

Fall. 3(3-0)

Forestry in its broadest sense, including: historic development, forest growth, protection and management, products, national and world economy and policy. Emphasis on multiple use concepts. One-day field trip required.

204. *Forest Vegetation*

Fall, Spring. 5(3-4) BOT 205 or approval of department.

Nomenclature, classification, and identification of important trees, shrubs, and herbaceous plants of forest and field.

220. *Plants and Their Environment*

Winter. 3(3-0) Interdepartmental with Natural Resources.

Fundamental ecological relationships between various climatic, edaphic and biotic environmental factors of the ecosystem and plant response, including structure, function and evaluation of species.

301. *Quantitative Methods for Natural Resources*

Fall. 4(3-2) MTH 109 or 111.

Collection and analysis of information pertaining to natural resources. Survey design, field procedures, equipment, and analytical techniques.

302. *Forest Inventory*

Winter. 3(2-3) 301.

Field and office techniques of forest inventory, with primary emphasis on timber resources.

305. *Silviculture*

Fall. 4(3-3) 204.

Interrelationships of trees of the forest community and the environment; natural and artificial forest reproduction methods; intermediate cuttings; field studies of silvicultural conditions.

306. *Forest Fire Protection and Use*

Spring. 3(3-0) Juniors or approval of department.

Causes and effects of forest fires. Combustion, fire behavior, and fire weather. Prevention and control planning and techniques. Use of fire in forest land management. One-day field trip required.

309. *Wood Technology*

Fall. 4(3-3)

Structure of wood. Mechanical and physical properties of wood. Wood anatomy and relation to growth.

319. *Forestry Today*

(419.) Spring. 3(3-0) Not open to majors.

For the non-forestry student, emphasizing multiple use of forests, scope and practice of forestry, environmental roles of forests, influences, products, non-timber uses of forests and current forest policy.

409. *Forest Hydrology*

Winter. 3(3-0) SLS 210.

Hydrologic cycle, with emphasis on soil, water and ground water regimes; instrumentation and measurement of the various components. Effects of forest management on watersheds and water yields.

410. *Forest Tree Improvement*

Fall. 3(2-2)

Distribution of genetic variation in natural tree populations. Introduction, selection, progeny testing, species hybridization, and polyploidy to obtain superior tree populations.

411. *Tree Physiology*

Fall. 3(3-0) BOT 301.

The fundamental principles of plant physiology with particular reference to the growth and development of woody plants, and consideration of the influence of genetic and environmental factors on physiological processes in trees.

424. *Forest Soils*

Spring. 4(3-3) 220; SLS 210. Interdepartmental with Soil Science.

Interrelationships of forest site and the growth of forests. Classification and productivity of forest soils. Effects of silvicultural and forest management practices on the soil. Two-day field trip required.

430. *Manufacture of Lumber and Composite Wood Products*

Spring. 3(3-0) 309.

Log and lumber grades, sawmill equipment and practices. Wood working machinery. Gluing of wood. Manufacture of pulp, plywood and other board products.

431. *Finishing, Preservation and Drying of Wood*

Winter. 3(3-0) 309.

Properties, selection, application of decorative and protective coatings, wood preservatives and fire retardants. Air and kiln drying of lumber.

432. *Methods in Wood Science*

Spring. 3(2-2) 309.

Application of standard laboratory testing procedures to the evaluation of basic properties of solid wood and wood products. Laboratory exercises in wood microtechnique and wood finishings.

446. *Range Management*

Winter. 4(3-3) 220 or approval of department.

Development of range industry; grazing regions and reconnaissance; planning multiple-use management on forest range and watershed.

449. *Field Studies in Forestry*

Fall. 3 credits. 302, 305.

Multiple use forest resource management in various forest regions. Two-week field trip required, prior to the fall term of the senior year.

450. *Natural Resource Administration*

Fall, Spring. 4(4-0) Interdepartmental with Fisheries and Wildlife, Parks and Recreation Resources and Resource Development Departments and Natural Resources.

Concepts and methods of administering wildlife properties. The legal, economic and social environment. Benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

454. *World Forestry*

Winter. 3(3-0)

Forest resources, forestry practices, and the forest economy throughout the world.

455. *Forestry Economics*

Winter. 4(3-2) 450 or approval of department.

Basic economic and political principles and techniques that govern the production and consumption of forest land products, including basic forest valuation procedures.

457. *Forest Management and Utilization Planning*

Spring. 5(4-2) 455.

Integrative planning for forest management, including multiple-use aspects and timber harvesting systems.

460. *Arboriculture*

Spring. 3(2-3) Approval of department.

Principles and techniques of species selection, establishment, and cultural practices used in the care and maintenance of shade and ornamental trees. Two-day field trip required.

465. *Forest and Wood Science Problems*

Fall, Winter, Spring, Summer. 1 to 5 credits. Seniors with a 2.80 average, or approval of department.

Special problems course for students qualified for advanced study in some phase of forestry or wood science.

491. *Natural Resources and Modern Society*

Spring, Summer. 3(3-0) Juniors. Interdepartmental with the Resource Development Department and Natural Resources.

A survey of the social and economic significance of natural resources in modern industrial and urban society. Current problems of natural resources management and use are examined in terms of the society in which they exist.

807. *Special Problems*

Fall, Winter, Spring, Summer. 2 to 5 credits. May re-enroll for credit with a maximum of 10 credits.

Advanced work in any of the following forestry specialties: administration biometrics, photogrammetry, dendrology, silviculture, management, economics, influences, ecology, genetics, arboriculture, hydrology, soils, recreation, physiology, policy, entomology, products harvesting, wood preservation, timber mechanics, wood conversion.

809. *Natural Resources Economics*

Winter. 3(3-0) Approval of department. Interdepartmental with the Resource Development Department.

Applications of economic analysis to natural resource problems.

828. *Seminar*

Fall, Winter, Spring. 1 to 3 credits. May re-enroll for a maximum of 12 credits if a different topic is taken.

Critical study and discussion of advanced forestry topics including natural resource economics, forest biology, and natural resource program budgeting.

150. Geography of Selected Current Problems

Winter. 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.

170. Future Worlds

Fall, Spring, Summer. 2(2-0)

Geographical approach to environmental, biological, economic, social and political problems facing mankind between now and year 2000.

IDC. Resource Ecology and Man

For course description, see **Interdisciplinary Courses.**

201. Geography of Culture

(401., 301.) Fall, Winter, Spring, Summer. 4(3-0)

A systematic discussion of cultural geography, stressing cultural processes and relationships.

IDC. Introduction to Study of the Moon

For course description, see **Interdisciplinary Courses.**

204. World Regional Geography

Fall, Winter, Spring, Summer. 4(4-0)

Man's relationship 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 man's environment, including their spatial, genetic, and functional interrelationships.

206L. Physical Geography Laboratory

Fall, Winter, Spring. 1(0-2) 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. 3(3-0)

Emphasis on distribution of natural resources, industries and service activities, stressing factors of location and economic concepts of locational change.

215. World Food Issues

Spring. 3(3-0) Interdepartmental with Food Science.

Food resources as related to world distributions of population, soil, water, fuel and minerals. Special attention to urbanization, irrigation, and future food needs and global constraints.

223. Introduction to Cartography

Fall, Winter, Spring. 4(2-4)

Principles and techniques of constructing maps and other graphic devices. Types of map reproduction.

224. Remote Sensing: Airphoto Interpretation

(324.) Fall, Winter. 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.

280. Perspectives on Geography

Spring. 2(2-0)

Introduction to the profession of geography for majors.