FORESTRY FOR

College of Agriculture and Natural Resources

In 305, 306, 402 and 430, field trips are scheduled for several consecutive days away from the campus for integrated field experience, primarily in the second half of spring term of the junior year, so that these courses must be taken concurrently. This precludes enrollment in other courses during that term. The approximate cost of these field trips is $200.

202. Introduction to Forestry
Fall, Spring, 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.

203. Resource Ecology
(FDC 206) Fall, Winter, Spring, Summer. 3(3-0) Interdepartmental with the department of Fisheries and Wildlife, Geography, 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. Forest Vegetation
Fall, Spring, 5(3-4)
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 Agriculture and Natural Resources.
Relationships between plants and fundamental climatic, edaphic, and biotic factors; structure and function of different ecosystems in relation to environmental factors.

301. Quantitative Methods for Natural Resources
Winter. 4(3-2) MTH 109 or MTH 111.
Collection and analysis of information pertaining to natural resources. Survey design, field procedures, equipment, and analytical techniques.

304. Forest Ecology
Fall, 4(3-0) FOR 204; BOT 205; CSS 210 or concurrently.
The forest is viewed as a biological community. Forest site relationships are quantified by examining the existing physical environment and relating it to the forest species occupying that community.

305. Silviculture
Spring, 4(3-3) FOR 204, FOR 304, FOR 402, FOR 424, FOR 425, FOR 429 concurrently.
Natural and artificial forest reproduction methods; intermediate stand treatments; non-timber aspects of silviculture; field studies of silvicultural methods. Extended field trips required.

306. Forest Fire Protection and Use
Winter of odd-numbered years. 3(3-3) Juniors or approval of department.
Causes and effects of forest fires. Combustion, fire behavior and fire weather. Prevention and control planning and techniques. Fire in forest land management.

308. Wood Technology
Fall, 4(2-3)
Structure of wood. Mechanical and physical properties of wood. Wood anatomy and relation to growth.

310. Wood Structure and Properties
Spring, 3(2-2) Not open to students with credits in FOR 209.
Properties and characteristics of solid wood, plywood, particleboard and hardboard with emphasis on their use in packaging. Laboratory is concerned with wood identification and strength testing.

402. Forest Inventory
Spring. 4(3-4) For 301, 305, FOR 424, FOR 425, FOR 429 concurrently.
Field and office techniques of forest inventory, with primary emphasis on timber resources. Extended field trips required.

409. Forest Hydrology
Winter. 3(3-0) For 424, Seniors; or approval of department.
Hydrologic cycle, with emphasis on soil, water and ground water regimes; instrumentation and measurement of the various components. Effects of forest management on watershed 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
Winter of even-numbered years. 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, 3(2-3) CSS 210; Juniors or approval of department. Forestry majors: FOR 304, FOR 402, FOR 423, FOR 429 concurrently.
Interdepartmental with the Department of Crop and Soil Sciences.
Interrelationships of forest site and the growth of trees. Properties, classification, inventories, productivity and management of forest soils. Effects of silvicultural and forest management practices on the soil.

425. Forest Soils Laboratory
Spring, 1(0-3) CSS 210, FOR 305, FOR 402, FOR 424, FOR 429 concurrently. Interdepartmental with the Department of Crop and Soil Sciences.
Exercises and field trips relating to properties, classification, inventory, productivity and management of forest soils. Extended field trips required.

426. Seminar
Fall. 1(1-0) Seniors.
Current forestry topics.

429. Timber Harvesting
Spring, 3(2-3) FOR 309, FOR 305, FOR 402, FOR 424, FOR 425 concurrently.
Pelling, bucking and transport of trees to mill site. Capabilities and limitations of mechanical devices, vehicles, and logging systems related to timber size and terrain. Extended field trips required.

430. Industrial Timber Utilization Processes
Winter, 3(2-2) FOR 429.
Mechanics and technologies of industrial wood conversion processes, including grading logs and lumber, manufacture of furniture, plywood, particleboard, fiberboard, and paper. Field trips required.

431. Finishing, Preservation and Drying of Wood
Winter. 3(3-0) FOR 309.
Properties, selection, application of decorative and protective coatings, wood preservatives and fire retardants. Air and kiln drying of lumber.

435. Law and Resources
Fall. 3(3-0) Interdepartmental with and administered by the Department of Resource Development. Law legal, cases, statutes and constitutional considerations are applied to natural resource utilization. Private and public property interests in natural resources are illustrated through case studies of use conflicts.

446. Range Management
Winter of even-numbered years. 4(4-0) For 220 or FOR 304 or approval of department.
The science of range management, with emphases on range regions, range vegetation management, livestock management practices, range improvements and multiple use values of range-lands.

450. Natural Resource Administration
Winter. 4(4-0) Seniors; not open to forestry majors. Interdepartmental with Agriculture and Natural Resources and the departments of Fisheries and Wildlife, Park and Recreation Resources, and Resource Development.

454. Forestry in International Development
Winter. 3(3-0)
Assessment of the world's forest resources, forest products industrial development and trade, and restraints of developmental objectives on forestry goals. Issues, policies, approaches, and prospects for individual countries.

455. Natural Resource Economics
Fall. 4(4-0) Approval of department. Interdepartmental with Agriculture and Natural Resources and the departments of Fisheries and Wildlife, Park and Recreation Resources, and Resource Development.
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 I
Fall. 3(2-5) FOR 305.
Managing the timber compartment. timber management systems, compartment examination, silvicultural prescription, yield projection and economic evaluation.

459. Forest Management II
Winter. 3(2-3) FOR 457.
Managing the forest property. Organization of forest properties, timber yield regulation, multiple-use planning, and administering management operations.
816. Special Problems in Plant Breeding and Genetics
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 3 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.

821. Genetic Concepts in Plant Breeding
Winter. 3(3-0) FOR 305 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.

822. Plant Breeding Systems
Winter. 3(3-0) FOR 321. 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 vegetatively propagated crops. The genetic basis for parent selection.

823. Plant Breeding Methods
Spring. 3(3-0) HRT 822, STT 423. 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.

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, 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) FOR 321 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.

839. Tissue Culture for Plant Breeding
Winter of even-numbered years. 3(3-2) BOT 414, CS 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. Recreational Economics
Spring. 4(4-0) FOR 309 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 impacts, economic decision making and policy considerations.
Calculations and implications of genetic parameters to plant breeding.

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

The role of simulation models in developing decision systems in natural resources management. Applications of multivariate techniques such as principal components, canonical analysis, factor analysis, and clustering to problems in forestry and plant physiology, and genecology.

The law dealing with agency and business organizations. Case study method.

The law of negotiable instruments, secured transactions, and property. Case study method.

Legal aspects of the hospitality industry.

Planned program of observation and work in selected business firms. Analysis and reports.

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.

Critical examination of the environment in which businesses operate. Analysis of the component elements of the legal environment of business and the structural framework in which law functions.

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

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

Students seminar to cover genetics subjects not considered in formal courses. Course is also intended to give students experience in reviewing and presenting results of research.

Recent advances in genetics and molecular biology of higher plants.

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

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

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.

Law of agency and business sources. May reenroll for a maximum of 12 credits. Approval of department.

Law of negotiable instruments, secured transactions, and property. Case study method.

THE LEGAL ENVIRONMENT OF BUSINESS

Fall, Summer. 4(4-0)

Critical examination of the environment in which businesses operate. Analysis of the component elements of the legal environment of business and the structural framework in which law functions.