229. 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(3-3) 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(3-3) 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
(415) Spring. 3(3-0) Not open to majors.
For the non-forestry student, emphasizing multiple use of forests, scope and practice of forestry, environmental impacts, forest uses, 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 polyplody 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 of soils, temperature, and biological 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
Winter. 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
Spring. 3(3-0) 309.
Properties, selection, application of decorative and protective coatings, wood preservatives and fire retardants. Air and kiln drying of lumber.

435. Methods in Wood Science
Spring. 3(3-2) 309.
Application of standard laboratory test procedures to the evaluation of basic properties of solid wood and wood products. Laboratory exercises in wood micrometry and wood finishes.

446. Range Management
Winter. 4(3-3) 220 or approval of department.
Development of range industry; grazing regions and reconnaissances; 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. 4(3-4) Interdepartmental with Fisheries and Wildlife, Parks and Recreation Resources and Resource Development Departments and Natural Resources. 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) 405 or approval of department.
Basic economic and political principles and techniques that govern the control and consumption of land resources, including basic forest valuation procedures.

457. Forest Management and Utilization Planning
Spring. 4(3-4) 455.
Integrative planning for forest management, including multiple-use aspects and timber harvesting systems.

480. Arboriculture
Spring. 3(3-2) Approval of department.
Principles and techniques of species selection and establishment, and cultural practices used in the care and maintenance of shade and ornamental trees. Two-day field trip required.

485. Forest and Wood Science Problems
Fall. 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.
891. Natural Resources and Modern Society
Spring, Summer. 3(3-0) Juniors. Interdepartmental with the Resource Development Department and Natural Resource Management. 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.

897. 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, insectology, soil science, recreation, weather, wood preservation, timber mechanics, wood conversion.

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

980. Simulation Models in Natural Resource Management
Fall, Winter, Spring, Summer. 3(3-0) Approval of department. Interdepartmental with and administered by the Resource Development Department. The role of simulation models in developing management strategies. Applications of computer simulation in natural resources. Modeling of decision systems in natural resources management.

206L. Physical Geography Laboratory
Fall, Winter, Spring. 1(2-0) 306 or concurrently. Laboratory study of geographic aspects of map interpretation, aerial photographs, weather, climate, soils, landforms, and vegetation.

213. Economic Geography
Fall, Winter, Spring, Summer. 3(3-0) Emphasis on world distribution of economic and business activities, stressing factors of location and economic concepts of locational change.

222. The World of Maps
Fall. 3(3-0). Discussion of types, practical applications, and sources of maps.

223. Introduction to Cartography
Fall, Winter, Spring. 4(1-6) Principles and techniques of constructing maps and other graphic devices. Types of map reproduction, application of quantitative methods to cartography.

280. Perspectives on Geography
Spring. 2(2-0) Introduction to the profession of geography for majors.

300. Geography of North America
Fall, Winter, Summer. 4(3-0) Human and physical geography of North America, north of the Mexican border.

301. Geography of Culture
(401) Fall, Winter, Spring, Summer. 3(3-0) 204. A systematic discussion of cultural geography, stressing cultural processes and relationships.

307. Geography of Environmental Quality
Fall. 4(3-0) Identification of the physical, cultural and psychological factors which constitute human environments, and how they vary and may be modified or controlled.

309. Geography of Recreation
Winter. 3(3-0) Recreational land use and services in the United States, including analysis of resources basic to such land use and their distribution.

310. Historical Geography of the United States
Spring, Summer. 4(3-0) Reconstruction of geographies of the United States as they existed in the past.

318. Cities of the World
Fall, Winter, Spring, Summer. 3(3-0) A cross-cultural examination of cities, their historic growth, regional functions, and internal dynamics.

390. Geography of Population
Fall. 4(3-0) A geographical analysis of world population including demographic characteristics, growth rates, and distributional patterns.

324. Remote Sensing: Airphoto Interpretation
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.