PACKAGING

College of Agriculture and Natural Resources

210. Principles of Packaging
Fall, Winter, Spring, Summer, 3(3-0)
A general course in packaging principles covering the growth and development of the field, and the technological and motivational problems involved in present day packaging. Consideration will be given to the basic functions of the package and their relation to the needs and wants of our society.

320. Packaging Materials
Fall, Winter, Spring, Summer, 3(3-0)
Common packaging materials including wood, paper, paperboard, plastics, metal foils and sheets, glass, adhesives, cushioning media, their basic properties in relation to performance of package.

330. Packaging Printing
Winter, Spring, 3(3-0) PKG 200 or approval of school.
Basic printing processes used for packaging materials. Advantages, disadvantages and identification of these printing methods.

340. Packaging and the Environment
Winter, Spring, 4(4-0)
A broad study of the effects of packaging on environmental quality, including solid waste, air and water quality, laws, economics, energy considerations and resources conservation.

422. Packaging Systems
Winter, Spring, 4(4-0) PKG 320 or approval of school.
Design, use and evaluation of packaging and packaging systems. A one-day field trip is required.

423. Dynamics of Packaging
Spring, 4(3-0) PKG 422 or approval of school.
A study of the protective function of the packaging systems in relation to their environment and shock and vibration isolation methods. A one-day field trip is required.

424. Packaging Problems
Fall, Winter, Spring, Summer, 1 to 4 credits, May reenroll for a maximum of 9 credits. PKG 422, 2-50 grade-point average and approval of school.
Development of solutions to specific packaging problems.

425. Packaging Development
Fall, Spring, 4(3-2) PKG 427, CPS 110, Seniors.
Development of packages to meet present-day requirements of protection and merchandising.

429. Packaging Economics
Winter, 3(3-0) PKG 422, EC 200, AFA 201, or approval of school.
Examination of economic issues in packaging as they relate to policies of the firm and of government. Relationships between economic policy and social issues.

430. Packaging Machinery
Spring, 4(4-0) PKG 422 or approval of school.
The components for automated packaging lines, and auxiliary materials handling equipment, including consideration of design, selection, specification and operation of machinery for the package-making and machine-filling operations. One-day field trip required.

463. Seminar
Fall, 2(0-4) Senior Majors.
Discussions on current packaging problems.

801. Packaging Systems
Fall, 4(3)
Analysis of existing packages, problem solving exercises.

820. Permeability and Shelf Life
Winter, 4(3-3) PKG 422, MTH 113, CPS 110 or approval of school.
Comprehensive study of the relationship of the storage life of packaged food and agricultural products and the gas, moisture, and vapor permeability of packages in various environments. Computer aided package design.

822. Seminar
Fall, 1(0-0) Approval of department.
Discussions of recent advances in packaging and reports by graduate students and faculty on research problems. Field trips required.

834. Special Investigations in Packaging
Fall, Winter, Spring, Summer. Variable credit.

840. Selected Topics
Fall, Winter, Spring, Summer, 1 to 4 credits. May reenroll for a maximum of 12 credits if different topics are taken. Approval of department.

899. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of school.

300. Wilderness Survival
Fall, Winter, Spring, Summer, 4(3-0)
Outdoor skills for utilization of plant and animal materials to provide shelter, fire, signals, water and food in the outdoors. Psychology and attitudes conducive to wilderness survival and appreciation. Field trip required.

301. Wilderness Survival (TV)
Fall, Winter, Spring, Summer, 4(3-0)
Credit may not be earned in both PRR 300 and 301.
A television lecture course dealing with the principles and attitudes necessary to promote survival in a wilderness setting.

302. Environmental Attitudes and Concepts
Fall, 3(3-0)

304. Designs for Recreation: Nature and Man
Fall, Spring, 3(3-0) Approval of department.
Design strategies are used to demonstrate relationships between characteristics of the environment and man's use of it. Integration of work, leisure, and recreation uses within environmental potentials and limits is emphasized.

344. Leisure and Recreation Resources
Fall, Spring, 3(3-0)
Leisure in relation to park and recreation resources. History and philosophy, significance in modern society, and impact on urban and natural resource developments.

351. Environmental Interpretation I: Principles
Fall, Winter, 3(3-0)
Philosophy, needs, types, and uses of information services in private, municipal, county, state and federal park and recreation areas. The role of the park interpreter (naturalist).

440. Park and Recreation Administration
Winter, Spring, 4(4-0)
Park and recreation organization, administration and policy at municipal, county, and regional level. Field trip required.

442. State and Federal Recreation Resource Policy
Winter, Spring, 3(3-0)
Origin, development and significance of public policy in recreation resource development in the United States with emphasis at state and federal levels. Field trip required.

444. Park and Recreation Area Design
Fall, Winter, 3(3-0)
Planning and design principles of space, scale, and circulation applied to the use of park and recreation areas and facilities. Field trip required.

PARK AND RECREATION RESOURCES PRR

College of Agriculture and Natural Resources

IDC. Resource Ecology and Man
For course description, see Interdisciplinary Courses.
445. Comprehensive Recreation Planning
Fall, Winter. 4(4-0) EC 200, PRR 344 or approval of department.
Comprehensive planning techniques for recreation resources at national, state, and local levels. Personnel practices, forecasting, maintenance equipment. Field trip required.

446. Park Area Operations
Winter, Spring. 3(3-0) Approval of department.
Observations of operations and maintenance of park and recreation areas and facilities. Personnel practices, budgeting, and maintenance schedules. Field trip required.

447. Recreation Planning Projects
Fall, Spring. 4(1-6) PKG 444, PKG 445, PKG 446 or approval of department.
Accumulative research, planning and evaluation of recreation resources. Supervised projects requiring synthesis of recreation planning and design criteria as selected by student and approved by instructor. Field trip required.

448. Field Studies in Park Administration
Fall. 3 credits. Approval of department.
Investigation and analysis of outstanding park and recreation problems. Visits to areas under local, state, and federal jurisdiction. Evaluation of administrative practices, area management, and operation policies. Conducted as a traveling class with agency assistance.

449. Recreation Land Management
Winter. 3(3-0) Not open to majors.
Fundamentals of outdoor recreation resource management, planning, development, and administration of programs and facilities.

450. Natural Resource Administration
Fall, Spring. 4(4-0) Seniors. Interdepartmental with the departments of Fisheries and Wildlife, Forestry, and Resource Development and Agriculture and Natural Resources. Administered by the Department of Forestry. Concepts and methods of administering wildlife properties. Legal, economic and social environment. Benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

451. Environmental Interpretation II: Methods and Devices
Spring. 4(3-1) PRR 351.
Methodology and equipment used in information transmission in natural, historic, and scenic areas. Site selection and development criteria for natural resource interpretation.

452. Sky Interpretation
Spring. 3(2-2) PRR 351 or approval of department.
Observations of celestial objects and phenomena, past and present concepts of the sky, and procedures and materials for interpreting the sky.

453. Natural Resource Economics
Winter. 4(4-0) FOR 450 or approval of department. Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Resource Development and Agriculture and Natural Resources. Administered by the Department of Forestry. Basic economic and political principles and techniques that govern the production and consumption of forest land products, including basic forest valuation procedures.

470. Commercial Recreation Enterprises
Fall. 4(4-0) EC 201; AFA 302 or approval of department.
The planning, design, impact, and natural resource base of privately-owned outdoor recreation businesses.

471. Recreation Products Consumption
Winter. 4(4-0) PRC 470 recommended.
EC 201, AFA 202, or approval of department. Recreation, economic and personal theories of consumption. Specific recreation product industry case studies.

480. Supervised Study
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 10 credits. Approval of department.
Seminars on current problems. Supervised readings. Individual undergraduate research on selected topics.

484. Senior Proseminar
Winter. 1(1-0) Senior majors.
Seminars on current professional problems and literature.

844. Recreation Research Methods
Winter. 4(4-0) Approval of department.
Relate research recreation research to broader context of social and recreational recreation research. Examine the theoretical and methodological approaches in recreation research.

846. Urban and Regional Recreation Planning
Fall. 4(4-0) Approval of department.
Evaluation and application of recreation planning techniques at urban and regional levels. Analysis of programs, policies, land areas, facilities, and populations as they pertain to leisure service delivery systems.

848. Recreation Research Seminar
Fall. 3(3-0) Approval of department.
Evaluation and application of recreation planning techniques at urban and regional levels. Analysis of programs, policies, land areas, facilities, and populations as they pertain to leisure service delivery systems.

850. Development of Water Recreation Resources
Winter. 3(3-0) Approval of department.
Evaluation and application of recreation planning techniques at urban and regional levels. Analysis of programs, policies, land areas, facilities, and populations as they pertain to leisure service delivery systems.

851. Environmental Interpretaition II: Methods and Devices
Spring. 4(3-1) PRR 351.
Methodology and equipment used in information transmission in natural, historic, and scenic areas. Site selection and development criteria for natural resource interpretation.

452. Sky Interpretation
Spring. 3(2-2) PRR 351 or approval of department.
Observations of celestial objects and phenomena, past and present concepts of the sky, and procedures and materials for interpreting the sky.