205 Field Study in Park, Recreation and Tourism Resources Delivery Systems
Spring. 2 credits. P: (PRR 213 and PRR 215) R: Open only to sophomores or juniors or seniors. Approval of department; application required. Field course illustrating public, non-profit, and commercial recreation delivery systems. Interrelationships of recreation with natural resources, cultural resources, facilities, and communities. Partnerships and competition among providers. Field trips required.

302 Environmental Attitudes and Concepts
Fall. 3(3-0) RB: One ISS course or one PSY course or one SOC course. R: Not open to freshmen. History of attitudes and values associated with the environment, wilderness, environmentalism, environmental quality, conservation, and preservation. Perceptions and assessment of modern environmental problems.

351 Recreation and Natural Resources Communication (W)
Fall, Spring. 3(2-2) P: (PRR 213) and completion of Tier I writing requirement. R: Open only to students in the Department of Park, Recreation and Tourism Resources. Not open to freshmen. Principles of communication for recreation and natural resource audiences. Application to various forms of interpretive media including verbal, graphic, and written. Field trips required.

370 Administration and Operation of Park and Recreation Systems
Fall and Spring. 3(3-0) P: (PRR 213 and PRR 215) RB: (PRR 293) R: Not open to freshmen or sophomores. Administration, operation and policy of park, recreation and tourism organizations. Legal foundations, concepts and responsibilities, ethical decision-making and personnel management.

371 Management of Park and Recreation Agencies and Organizations
Spring. 3(3-0) P: (PRR 213 and PRR 215) R: Not open to freshmen or sophomores. Management concepts and methods. Budgeting, service marketing, and strategic planning in park, recreation and tourism organizations.

388 Physical Resource Management in Parks, Recreation and Tourism
Fall. 3(2-2) P: (PRR 213 and PRR 215) RB: (PRR 293) R: Open only to sophomores or juniors or seniors. Relationships among natural resources, the environment, recreational use and site design and development. Principles to safeguard, maintain and restore recreation environments.

389 Planning and Evaluation in Parks, Recreation and Tourism
Fall. 3(3-0) P: (PRR 215 and PRR 213) RB: (PRR 293) R: Open only to juniors or seniors. Planning, research and evaluation of recreation and tourism systems. Research methods, resource inventory and classification, use estimation, demand forecasting, marketing, and needs assessment. Formative, process, and summative evaluations using secondary data, surveys, observation, experiments, case studies and focus groups.

410 International Studies in Tourism, Parks and Recreation
Fall. 3(3-0) P: (PRR 213 and PRR 215) R: Open only to freshmen or sophomores. Integration of natural resource management, security, interpretation, and outdoor programming. Visitor and resource management tools and models.
464 Natural Resource Economics and Social Science (W)
Fall. 3(2-2) Interdepartmental with Forestry; Fisheries and Wildlife; Resource Development. Administered by Department of Forestry. P: (EC 201 or EC 202) and completion of Tier I writing requirement. R: Not open to freshmen or sophomores. Application of economic and social science principles and techniques to production and consumption of natural resources. Benefit-cost analysis. Regional impact analysis. Social impact assessment.

466 Natural Resources Planning and Policy
Spring. 3(2-2) Interdepartmental with Forestry; Fisheries and Wildlife; Resource Development. Administered by Department of Forestry. R: Open only to seniors or graduate students. Major sectors and emerging types of tourism. Industry and market trends. Tourism and community development. Evaluating and managing the impact of tourism.

473 Commercial Recreation and Tourism Businesses and Organizations
Fall. 3(3-0) RB: (PRR 370) R: Open only to juniors or seniors or graduate students. Start-up and management of commercial recreation and tourism businesses with an emphasis on small businesses. Roles and responsibilities of industry associations. Establishment and operation of tourism marketing organizations.

474 The Tourism System
Fall. 3(3-0) RB: (PRR 370 and PRR 371) R: Open only to juniors or seniors or graduate students. Major sectors and emerging types of tourism. Industry and market trends. Tourism and community development. Evaluating and managing the impact of tourism.

485 Legal Aspects of Community-Based Recreation
Fall. 3(3-0) R: PRR 213 and PRR 215) R: Open only to juniors or seniors. Application of legal concepts to management and operation of programs, services, and facilities of private nonprofit and public entities. Legal strategies. Human rights and behaviors. Management of risk liability.

487 Community-Based Recreation Facility Management
Spring. 3(2-2) RB: (PRR 388 and PRR 485) R: Open only to seniors or graduate students. Analysis of the operation and maintenance of facilities and equipment used in the delivery of recreation programs and services. Management of human interaction within communities. Field trips required.

488 Community-Based Recreation Programming
Spring. 3(2-2) RB: (PRR 215 and PRR 370 and PRR 371 and PRR 388 and PRR 485) R: Open only to juniors or seniors or graduate students. Recreation programs and services in rural and urban settings. Nonprofit, public and private agencies. Delivery systems and research procedures. Effective community-based recreation in relation to human services.

489 Seminar in Zoo and Aquarium Science
Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. Interdepartmental with Zoology; Fisheries and Wildlife. Administered by Department of Zoology. R: Approval of department. Scientific writing and oral presentations related to zoo and aquarium studies.

490 Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department; application required. Individualized readings and research compatible with students’ interests and abilities under the guidance of a faculty member.

491 Special Topics in Park and Recreation Resources
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department; application required. Group studies for advanced undergraduate students having special interests in Park and Recreation Resources.

493 Professional Internship in Park, Recreation and Tourism Resources
Fall, Spring, Summer. 3 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: (PRR 393 and PRR 293) R: Open only seniors in the Department of Park, Recreation and Tourism Resources. Approval of department; application required. A student may earn a maximum of 6 credits in all enrollments for any or all of these courses:: ABM 493, AEE 493, ANR 493, ANS 493, CSS 493, EEP 493, FIM 493, FW 493, HRT 493, PKG 493, PLP 493, PRR 493, and RD 493. Supervised professional experiences in agencies and businesses related to park, recreation and tourism resources.

815 Park and Recreation Program Services
Fall, Spring. 3(0-6) R: Open only to juniors or seniors. Concepts, theories, and philosophies of leisure and recreation. Role and function of delivery systems in communities. Management of the program-planning process and provision of recreation services to diverse groups.

816 Environmental Design Theory
Fall. 3(3-0) Interdepartmental with Landscape Architecture; Horticulture; Human Environment and Design. Administered by Department of Geography. RB: Undergraduate design degree recommended. Differences between normative theories, scientific theories, models, and constructs. Exploration of normative theories related to thesis or practicum.

817 Environmental Design Studio
Spring. 3(0-6) Interdepartmental with Landscape Architecture; Horticulture; Human Environment and Design. Administered by Department of Geography. P:M: (LA 816 and LA 883) RB: Undergraduate design degree. Development of a student-selected environmental design project in a collaborative setting.

829 The Economics of Environmental Resources
Fall. 3(3-0) Interdepartmental with Agricultural Economics; Economics; Forestry; Resource Development. Administered by Department of Agricultural Economics. Economic principles related to environmental conflicts and public policy alternatives. Applications to water quality, land use, conservation, development, and global environmental issues.

840 Recreation and Tourism Economics
Fall. 3(0-3) R: Open only to graduate students. Economic concepts in public and private sector recreation and tourism decisions. Non-market valuation techniques. Regional economic impact. Demand and supply. Forecasting consumption trends. Financial and benefit cost analysis.

841 Park and Recreation Administration and Policy
Fall. 3(3-0) R: Open only to graduate students. Administration and management of park and recreation services in urban and rural environments. Policy development and evaluation. Planning, financial, staffing, operating and evaluating organizational structures.

842 Parks and Protected Areas Policy and Management
Spring of even years. 3(3-0) R: Open only to graduate students. History of policies related to parks and protected areas. Current state and federal policies and agencies. Interaction between policy and management. Current US and international issues and applications.

844 Research Methods in Recreation, Parks, and Tourism
Spring. 3(3-0) R: Open only to graduate students. Recreation research needs, techniques, assessment and application. Management problems and decision making.

848 The Law and Leisure Services
Spring. 3(0-3) R: Open only to graduate students. Risk control. Legal audits. Human rights mandates. Legal information systems. Contracts and participant forms. Intentional tort and negligence concepts. Personal legal processes.

870 Park, Recreation and Natural Resources Marketing
Fall. 3(3-0) R: Open only to graduate students in the Department of Park, Recreation and Tourism Resources or Department of Resource Development or Department of Forestry or Department of Fisheries and Wildlife. Integration of marketing concepts and methods into agency planning and decision making.

874 Leisure, Travel and Tourism
Fall. 3(3-0) R: Open only to graduate students. Modern concepts of leisure, travel, and tourism. Historical antecedents and current concepts of leisure, travel, and tourism.

879 Case Studies in Park and Recreation Resources
Spring. 3(3-0) R: Open only to graduate students. Integrated approach to policy, planning, and management problems.
Park, Recreation and Tourism Resources—PRR

883 Environmental Design Seminar
Fall. 3(3-0) Interdepartmental with Landscape Architecture; Horticulture; Human Environment and Design. Administered by Department of Geography. RB: Undergraduate design degree. Examination of the breadth of environmental design projects. Literature review of focused projects. Development of practicum or thesis proposals.

885 Leadership in Natural Resources and Environmental Management
Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife; Forestry; Agricultural Economics. Administered by Department of Fisheries and Wildlife. Theory and practice of leadership in natural resource and environmental management. Integration across disciplinary and jurisdictional divisions.

890 Independent Study
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 7 credits in all enrollments for this course. Supervised individual study in an area of parks, recreation, leisure, or tourism.

891 Selected Topics
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Selected topics in park and recreation resources of current interest and importance.

892 Park and Recreation Resources Seminar
Fall, Spring. 1 to 2 credits. A student may earn a maximum of 2 credits in all enrollments for this course. Current policy issues, problems and research in parks, recreation and tourism.

895 Coastal and Maritime Heritage and Management
Fall of even years. 3(3-0) Integrated management of coastal and maritime resources. Coastal tourism. Natural, historic and cultural resources. Legal, social and political contexts. History and lifeways. Commercial and recreational uses. Research, conservation and outreach. Field trip required.

898 Master's Project
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: Open only to master's students in Park, Recreation and Tourism Resources. Master’s project research or practicum.

899 Master's Thesis Research
Fall, Spring. 1 to 6 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to master’s students in the Park, Recreation and Tourism Resources major. Approval of department. Master's thesis research.

923 Advanced Environmental and Resource Economics
Fall. 3(3-0) Interdepartmental with Agricultural Economics; Economics; Forestry; Resource Development. Administered by Department of Agricultural Economics. RB: (AEC 829 and EC 812A) Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.

925 Advanced Natural Resource Economics
Spring. 3(3-0) Interdepartmental with Agricultural Economics; Forestry; Resource Development; Economics. Administered by Department of Agricultural Economics. RB: (EC 812A and AEC 829 and FOR 866) SA: AEC 991H Economic theory of managing nonrenewable and renewable resources, including optimal use, the incentives for use under decentralized markets, and public policy design. Analysis of the co-evolution of economic and ecological systems.

944 Advanced Research Methods
Summer. 3(3-0) RB: (PRR 844) Applications of advanced and specialized research methods to problems in recreation and tourism. Measurement, sampling, and research design.

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Park and Recreation Resources. Doctoral dissertation research.

PATHOLOGY—PTH

Department of Pathobiology and Diagnostic Investigation
College of Veterinary Medicine

551 General Pathology
Spring. 3(2-2) R: Completion of Semester 1 of the graduate professional program in the College of Veterinary Medicine. Host responses to injury, including cell degeneration, necrosis, disturbances of growth and development, neoplasia, circulatory disturbances and inflammation.

553 Clinical and Systemic Pathology
Fall. 5(4-2) R: Completion of Semester 2 of the graduate professional program in the College of Veterinary Medicine. Hematology. Pathology of hematopoietic, lymphatic, digestive, urinary, respiratory, integumentary, cardiovascular, nervous, reproductive, musculoskeletal, endocrine, ocular, and otic systems.

630 Diagnostic Pathology Clerkship
Fall, Spring. 3 credits. RB: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. Necropsy and surgical and clinical pathology. Interpretation of gross findings and laboratory data.

631 Necropsy Clerkship
Fall, Spring. 3 credits. RB: (PTH 630) Completion of Semester 5 of the Graduate Professional Program in the College of Veterinary Medicine. Supervised necropsy. Interpretation and presentation of findings.

632 Problems in Veterinary Pathology
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Completion of Semester 5 of the graduate professional program in the College of Veterinary Medicine. A: Approval of department. Supervised projects involving gross pathology, histopathology, clinical pathology, or molecular pathology.

634 Endocrinology Clerkship
Spring. 3 credits. RB: Open only to graduate-professional students who have completed semester 5 of the graduate professional program in the College of Veterinary Medicine. Principles of endocrinology and diagnosis of endocrinology disorders. Case review and interpretation.

635 Special Problems in Histopathology and Cytology Clerkship
Spring. 3 credits. P:M: (PTH 630) RB: Completion of Semester 5 of the professional program in the College of Veterinary Medicine. Study of the histopathology and clinical cytolgy of various diseases of veterinary importance.

804 Molecular and Developmental Neurobiology
Fall. 3(3-0) Interdepartmental with Neuroscience; Pharmacology and Toxicology; Psychology; Zoology. Administered by Program in Neuroscience. RB: Bachelor's degree in a Biological Science or Psychology. R: Open only to graduate students in the Neuroscience major. Nervous system specific gene transcription and translation. Maturation, degeneration, plasticity and repair in the nervous system.

812 Advanced Clinical Chemistry
Spring of even years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology Program. RB: (BMB 462 and MT 414 and MT 416) Biochemical basis of selected pathologic conditions including inborn errors of metabolism, endocrine and other genetic disorders. Emphasis on current diagnostic techniques.

820 Advanced Human Hematology
Spring of odd years. 2(2-0) Interdepartmental with Medical Technology. Administered by Medical Technology Program. RB: (MT 424) Pathogenesis, mechanisms, and morphologic pictures. Laboratory tests and interpretation of results.