

PACKAGING

817*. **Instrumental Analysis of Packaging Materials**
 Fall of even-numbered years. 4(3-2)
 P: PKG 320, PKG 325
 Spectrophotometric, chromatographic, thermal and other methods of analysis applied to packaging. Material identification and characterization. Migration and permeation measurements.
 QP: PKG 331 PKG 332 QA: PKG 330

825*. **Polymeric Packaging Materials**
 Fall. 4(3-2)
 P: PKG 320
 Physical and chemical properties of polymeric materials and structures commonly used in packaging and relationships to performance.
 QP: PKG 331 QA: PKG 810

835*. **Experimental Design and Data Analysis in Packaging**
 Summer. 3(2-2)
 R: Graduate students Packaging
 Design of packaging experiments and the use of statistical analysis software for personal computers.

875*. **Stability and Recyclability of Packaging Materials**
 Fall of odd-numbered years. 3(3-0)
 P: PKG 320, PKG 325
 Interactions between packaging materials and their environments, including corrosion, degradation, stabilization, and recycling. Impacts of packaging disposal.
 QP: PKG 331 PKG 332

890*. **Special Investigations in Packaging**
 Fall, Spring, Summer. 1 to 3 credits.
 May reenroll for a maximum of 4 credits.
 R: Graduate students Packaging Approval
 Development of solutions to unique packaging problems.
 QA: PKG 834

891*. **Selected Topics**
 Fall, Spring, Summer. 1 to 4 credits.
 May reenroll for a maximum of 9 credits.
 R: Graduate students
 Topics selected by faculty appropriate to current needs of graduate curriculum.
 QA: PKG 840

899*. **Masters Thesis Research**
 Fall, Spring, Summer. 1 to 8 credits.
 May reenroll for a maximum of 15 credits.
 R: Masters candidates Packaging
 Search for new knowledge in selected area of packaging.
 QA: PKG 899

PARK AND RECREATION RESOURCES PRR

200. **Leisure and Society**
 Fall, Spring, Summer. 3(3-0)
 Leisure and recreation as part of daily life. Leisure as a social, psychological, political, economic and cultural force in the United States.
 QA: PRR 200

210. **Our National Parks and Recreation Lands**
 Fall, Spring, Summer. 3(3-0)
 Scope and history of federal recreation lands. Comparisons of national parks to other federal lands. Recreation land management in other nations. Future federal land management options.
 QA: PRR 210

213*. **Introduction to Parks, Recreation, and Leisure**
 Fall, Spring, Summer. 3(3-0)
 R: Not open to freshmen and sophomores.
 The scope and management of recreation services and resources. Historical and philosophical foundations. Influence of recreation behavior on state, national, international, economic, political and social institutions.
 QA: PRR 213

215*. **Recreation Program Management**
 Fall, Spring. 4(3-2)
 R: Not open to freshmen.
 Programming and leadership principles for planning, management, and evaluation. Program design and conduct to service different clientele, using leisure education, program development, and small group processes. Field trips required.
 QA: PRR 215

293*. **Field Work in Park and Recreation Resources**
 Fall, Spring, Summer. 1(4-1) May reenroll for a maximum of 3 credits.
 P: PRR 213, PRR 215 R: Junior and above.
 Professional field experience. Leadership development. Supervision of activity in a park and recreation setting development.
 QA: PRR 403

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

320*. **Human Behavior in Park and Recreation Settings**
 Spring. 3(3-0)
 P: PRR 213, and one PSY course or one SOC course.
 Antecedents, intervening conditions, and outcomes of human behavior in park, recreation, and leisure settings. Interactions between recreation behavior and the natural environment. Problem solving in recreation.
 QP: PRR 213 PRR 215 QA: PRR 320

351*. **Recreation and Natural Resources Communication**
 Fall. 3(3-0)
 P: PRR 213. R: 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.
 QP: PRR 213 PRR 215 QA: PRR 351 PRR 304

362*. **Recreation for Special Populations**
 Fall. 3(3-0)
 P: PRR 213. R: Not open to freshmen.
 Therapeutic recreation services emphasizing handicapped and geriatric characteristics. Chemical dependency issue. Leisure lifestyle issues. Philosophical foundations and service models. Integration, normalization, inclusion, and empowerment concepts
 QP: PRR 213 PRR 215 QA: PRR 362

372*. **Management of Park and Recreation Agencies and Organizations**
 Spring. 4(4-0)
 P: ACC 230, PRR 213, PRR 215. R: Not open to freshmen and sophomores.
 Management and operating concepts and methods. Revenues and cost management, service marketing, staffing and supervision.
 QP: ACC 230 PRR 213 PRR 215 QA: PRR 440 PRR 470 PRR 471

393*. **Professional Seminar**
 Fall, Spring. 1(1-0)
 P: PRR 293. R: Open only to majors in Park and Recreation Resources.
 Linkage of field work and internship. Integration of course work with professional practice.
 QP: PRR 303 QA: PRR 384

443*. **Parks and Recreation Planning and Design Concepts**
 Spring. 4(2-4)
 P: PRR 351. R: Not open to freshmen and sophomores.
 Planning models and design analysis, synthesis, and communication and recreation and tourism subsystem and supply analysis.
 QP: PRR 351 QA: PRR 444 PRR 445 PRR 304

449*. **Management of Natural Resource Based Recreation**
 Fall. 3(3-0)
 P: PRR 213. R: Not open to freshmen and sophomores.
 The history of natural resource recreation management in the U.S. Techniques for dispersed and developed recreation management. Security of facilities, visitors, and personnel.
 QP: PRR 213 QA: PRR 449

451*. **Park Interpretive Services and Visitor Information Systems**
 Spring of even-numbered years. 3(3-0)
 P: PRR 351. R: Not open to freshmen and sophomores.
 Orientation, management, and education information systems. Influencing visitor behaviors. Goals and functions of interpretation. Types of services. Nature/visitor center programming and facility design and layout. Historical-cultural interpretation.
 QP: PRR 351 QA: PRR 451

467*. **Programming in Therapeutic Recreation**
 Fall. 3(3-0)
 P: PRR 362.
 Comprehensive and individual program planning methods. Standards of practice, quality assurance, interview techniques, professional ethics, and terminology. Field trips required.
 QP: PRR 362 QA: PRR 467

468*. **Therapeutic Recreation Techniques**
 Spring. 3(3-0)
 P: PRR 467
 Documentation principles. Principles of pharmacology related to therapeutic recreation. Leisure education. Facilitation techniques. Assistive recreation devices. Professional and certification issues.
 QP: PRR 467 QA: PRR 468

473*. **Commercial Recreation and Tourism Enterprises**
 Fall of even-numbered years. 3(3-0)
 P: EC 201, PRR 371. R: Not open to freshmen and sophomores.
 Management and operation of resort, recreation, and tourism enterprises. Emphasis on small business. Strategic planning, feasibility studies, market assessment, and quality assurance.
 QP: EC 201 ACC 202 PRR 384 QA: PRR 470 PRR 471

474*. **Community and Natural Resource Based Tourism**
 Spring of even-numbered years. 3(3-0)
 P: PRR 213 R: Junior or above
 Developing, sustaining and integrating community and natural resource based tourism. Environmental, social and economic considerations. Agencies and organization roles and responsibilities. Impact management. Tourism-based community and rural development

PARK AND RECREATION RESOURCES

475*. **Evaluation in Parks and Recreation**
 Fall. 3(3-0)
 P: PRR 370 and STT 200 or STT 201 or PSY 295 or GEO 427. R: Seniors and above.
 Evaluation concepts, approaches and types. Utilization of evaluative processes in management and administrative functions. Application of evaluative research methods and data collection techniques. Analysis, interpretation, and presentation of data.
 QP: PRR 215 PSY 215GEO 427 QA: PRR 430

485*. **Legal Aspects of Parks, Recreation, and Sport**
 Fall. 3(3-0)
 P: PRR 441. R: Open only to seniors and graduate students.
 Legal concepts in management and operation of public and private programs, areas and facilities. Tort liability and risk management planning. Rights and behavior constraints of clientele. Legal foundations of authority.
 QP: PRR 440 QA: NEW

490*. **Independent Study**
 Fall, Spring, Summer. 1(4-1) May reenroll for a maximum of 6 credits.
 P: PRR 215, PRR 320. R: Not open to freshmen and sophomores. Approval of department; application required.
 Individualized readings and research compatible with students' interests and abilities under the guidance of a faculty member.
 QP: PRR 215 PRR 320 QA: PRR 480

491*. **Special Topics in Park and Recreation Resources**
 Fall, Spring. 1 to 4 credits. May reenroll for a maximum of 6 credits.
 P: PRR 215; PRR 320 R: Juniors and above.
 Group studies for advanced undergraduate students having special interests in Park and Recreation Resources.
 QP: PRR 215 PRR 320

815*. **Park and Recreation Program Services**
 Fall. 3(3-0)
 R: Graduate
 Concepts, theories, 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.

840*. **Recreation and Tourism Economics**
 Fall. 3(3-0)
 R: Graduate
 Uses of economic concepts in making public and private sector recreation and tourism decisions. Non-market valuation techniques, regional economic impact, demand, supply, forecasting consumption trends, economics of finance and benefit cost analysis.
 QA: PRR 840

841*. **Park and Recreation Administration and Policy**
 Fall. 3(3-0)
 R: Graduate Students
 Administration and management of park and recreation services for communities in changing urban and rural environments. Policy development and evaluation. Planning, financing, staffing, operating and evaluating organizational structures.
 QA: PRR 871

844*. **Nature Of Inquiry In Recreation, Parks and Tourism**
 Spring. 3(3-0)
 R: Graduate Standing
 Comparative review of recreation research methods and techniques. Assessment of application of research to recreation management problems and decision making.
 QA: PRR 844

848*. **The Law and Leisure Services**
 Spring. 3(3-0)
 R: Graduate Standing
 Risk control. Legal audits. Human rights mandates. Legal information systems. Contracts and participant forms. Intentional tort and negligence concepts. Personnel legal processes.
 QA: PRR 848

870*. **Marketing Park, Recreation and Natural Resources**
 Fall of odd-numbered years. 3(3-0)
 R: Graduate
 Marketing concepts as applied to parks, recreation and natural resource organizations. Emphasis on strategic rather than tactical marketing. Illustrations of how marketing concepts and methods can influence and facilitate organizations.
 QA: 871

874*. **Leisure, Travel and Tourism**
 Spring. 3(3-0)
 R: Graduate Standing
 Principles and concepts of travel and tourism, drawing upon disciplinary research and current studies on recreation, tourism and leisure. Focus on integration of leisure, recreation and tourism, particularly resource based tourism behavior.
 QA: PRR 871

879*. **Integrated Approach to Current Park and Recreation Problems**
 Spring. 3(3-0)
 P: PRR 840, PRR 841 R: Graduate
 An integrated multi-disciplinary case study approach to current park and recreation related policy, planning, and management problems.

890*. **Selected Topics**
 Fall, Spring, Summer. 1(6-1) May reenroll for a maximum of 9 credits.

Selected topics in recreation, parks, leisure and tourism. Planning, administrative problems, resource management, recreation and tourism policy, aging and leisure.

891*. **Special Problems**
 Fall, Spring, Summer. 1(6-1) May reenroll for a maximum of 9 credits.
 R: Graduates
 Independent study in parks, recreation, leisure, and tourism topics and problems

892*. **Park and Recreation Resources Seminar**
 Fall, Spring. 1(6-1) May reenroll for a maximum of 2 credits.
 R: Graduates
 Current policy issues, problems and research in Parks, Recreation and Tourism.

899*. **Master's Thesis Research**
 Fall, Spring, Summer. 1(6-1) May reenroll for a maximum of 8 credits.
 R: Graduate M.S. Students in Thesis Program

944*. **Advanced Research Methods**
 Fall. 3(3-0)
 P: One statistics course, one research methods course. R: Graduate
 Applications of advanced and specialized research methods to problems in recreation and tourism research. Current measurement, sampling, design, and statistical problems in leisure research.

999*. **Doctoral Dissertation Research**
 Fall, Spring, Summer. 1(24-1) May reenroll for a maximum of 24 credits.
 R: Graduate PRR, Ph.D. Level Students

PATHOLOGY

PTH

542. **Basic Principles of Pathology**
 Spring. 2(-)
 R: Graduate-professional students in colleges of Human and Osteopathic Medicine.
 Fundamental pathologic processes; clinical applications.

550*. **Veterinary Pathology**
 Fall. 4(3-3)
 P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none
 Principles of pathology, including causes of disease, disturbances of cell growth and metabolism, necrosis, circulatory changes, inflammation and neoplasia.

551*. **General Pathology**
 Spring. 3(2-2)
 P: Admission to the College of Veterinary Medicine R: College of Veterinary Medicine Veterinary Medicine none
 Principles of general pathology and host responses to injury, including cell degeneration, necrosis, disturbances of growth and development, neoplasia, circulatory disturbances and inflammation.

552*. **Veterinary Clinical Pathology**
 Fall. 3(2-3)
 P: Completion of Year 1 of the College of Veterinary Medicine. R: Year 2 College of Veterinary Medicine Veterinary Medicine none
 Technical aspects, principles and interpretation of selected laboratory procedures in hematology, chemistry, cytology and related areas.

553*. **Clinical and Systemic Pathology**
 Fall. 5(4-2)
 P: Admission to the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none
 Clinical and anatomic pathology of the various body systems; hematology, pathology of hematopoietic, lymphatic, digestive, urinary, respiratory, integumentary, cardiovascular, nervous, reproductive, musculoskeletal, endocrine, ocular and otic systems.

592*. **Poultry Pathology Clerkship**
 Spring. 2(-)
 P: Completion of Year 3 of the College of Veterinary Medicine R: Year 4 College of Veterinary Medicine Veterinary Medicine none
 Each student will work under the direction of a faculty member on an experimental, theoretical or applied problem.

621*. **Histopathology Clerkship**
 Fall. 2(-)
 P: Completion of Year 3 of the College of Veterinary Medicine. R: Year 4 College of Veterinary Medicine Veterinary Medicine none
 Supervised instruction in the examination and interpretation of histologic lesions caused by animal diseases.

630*. **Diagnostic Pathology Clerkship**
 Fall, Spring, Summer. 3(-) May reenroll for a maximum of 6 credits.
 P: Completion of semesters 1-5 of the College of Veterinary Medicine. R: College of Veterinary Medicine Veterinary Medicine none
 Necropsy, surgical pathology and clinical pathology with emphasis on interpretation of gross findings and laboratory data.

651*. **Veterinary Clinical Pathology Clerkship**
 Fall, , Summer. 3(-)
 P: Completion of Year 3 of the College of Veterinary Medicine. R: Year 4 College of Veterinary Medicine Veterinary Medicine none
 Concepts in laboratory interpretation and diagnosis.