544.  Integrated Clinical Correlations IV  
Fall, 1.00-02)  
P: Unit I courses. C: OST 522, 512, 523  
R: College of Osteopathic Medicine students only  
A multidisciplinary approach to the application of  
basic science information and osteopathic principles  
to the solution of clinical problems.

545.  Integrated Clinical Correlations V  
Spring, 1.00-02)  
P: Unit I courses. OST 544 C: OST 513,  
524, 525 R: College of Osteopathic Medicine students only  
A multidisciplinary approach to the application of  
basic science information and osteopathic principles  
to the solution of clinical problems.

546.  Integrated Clinical Correlations VI  
Summer, 1.00-02)  
P: Unit I courses. OST 545 C: OST 527,  
528 R: College of Osteopathic Medicine students only  
A multidisciplinary approach to the application of  
basic science information and osteopathic principles  
to the solution of clinical problems.

554.  Systems Biology: Cardiovascular  
Spring, 8.07-02)  
P: ANT 551, 553; BCH 551; PST 501,  
MPH 551; PTH 542; PPM 583 R: College of Osteopathic  
Medicine students only  
A multidisciplinary study of the cardiovascular system  
in health and disease.  
QA: OST 554

555.  Systems Biology: Respiratory  
Spring, 5.04-02)  
P: ANT 551; PST 501; MPH 552; BCH  
521; PPM 583 C: Clinical Correlations R: College  
of Osteopathic Medicine students only  
Discussion of pulmonary physiology, diagnosis  
and treatment of clinical pulmonary and ENT disease  
states, review of anatomy, advanced airway manage­  
ment skills and advanced cardiac life support (ACLS).  
QA: ANT 565 PST 500 AMPH 521 BCH 502P  
PHM 580 QA: OST 555

PACKAGING
PKG

210.  Principles of Packaging  
Fall, Spring, Summer. 3.0-0)  
Packaging systems, materials and forms and their  
relationship to the needs and wants of society.

310.  Technical Principles and  
Dynamics for Packaging  
Fall, Spring. 4.3-0)  
P: MTH 134 or MTH 132; PHY 232. R:  
Open only to Packaging majors.  
Testing, evaluating, and predicting package perfor­  
mance under various environmental conditions.  
Methods of protection against shock, vibration, and  
other environmental hazards.  
QA: PHY 236 MTH 1120R MTH 122 QA: PKG  
321 PKG 423

320.  Plastic and Glass Packaging  
Fall, Spring. 4.3-0)  
P: CEM 143, PKG 310. R: Open only to  
Packaging majors.  
Physical and chemical properties of plastic and  
glass and their relationship to selection, design,  
manufacture, performance and evaluation of packages.  
QA: PKG 321 CEM 143 QA: PKG 321

325.  Paper and Metal Packaging  
Fall, Spring. 4.3-0)  
P: CEM 143, PKG 310. R: Open only to  
Packaging majors.  
Physical and chemical properties, manufacture, con­  
version and use of wood, paper, paperboard, metal  
and related components. Design, use and evalua­  
tion of packages.  
QA: PKG 321 CEM 143 QA: PKG 332

420.  Distribution and  
Performance Testing  
Spring. 3.3-0)  
P: PKG 310.  
Interrelationships between packaging and distribution  
systems. Transportation, material handling, ware­  
housing. Logistics and management systems. Perfor­  
mance testing and industry practices. Package con­  
tainer design and testing.  
QA: PKG 321 PKG 423 QA: PKG 435 PKG  
433

475.  Packaging Economics  
Fall. 3.3-0)  
P: EC 210 or EC 202.  
Economic issues in packaging as they relate to policies  
of the firm and of government. Relationships between  
economic policy and societal issues.  
QA: PKG 321 ORBC 520 QA: PKG 429

480.  Packaging Laws and Regulations  
Spring. 3.3-0)  
P: PKG 320 or PKG 325.  
History and development of packaging laws and  
regulations. Relationships among law, government  
regulation and commercial regulation. Effect of cur­  current laws and regulations on packaging.  
QA: PKG 331 ORPK 332 QA: PKG 450

485.  Packaging Systems Development  
Fall, Spring. 3.3-0)  
P: PKG 432. R: Open only to Packaging  
majors.  
Package development including selection, design and  
implementation of package systems for protection,  
distribution, merchandising, use and disposal.  
QA: PKG 423 PKG 425 QA: PKG 438

490.  Directed Studies in Packaging  
Fall, Spring, Summer. 1 to 3 credits.  
May enroll for a maximum of 6 credits.  
Selected topic of current interest.  
QA: PKG 440

492.  Senior Seminar  
Spring. 3.0-0)  
P: Open only to seniors in Packaging  
Seminar on current packaging issues, business organi­  
zation and operations, and accepted practices in a  
corporate environment.  
QA: PKG 463

805.  Advanced Packaging Dynamics  
Spring. 2.3-0)  
P: PKG 310.  
Advanced topics in shock and vibration. Distribution  
hazards and product fragility. Cushion performance  
and package design. Environmental measurement  
and simulation.  
QA: PKG 423 QA: PKG 823

815.  Permeability and Shelf Life  
Spring. 3.3-0)  
P: PKG 320, PKG 325, MTH 124 or MTH  
132  
Relationship between the storage life of packaged  
food and pharmaceutical products and the gas, moisture,  
and oxygen vapor permeability of packages in various  
environments.  
QA: PKG 331 PKG 332 MTH 113 QA: PKG  
820
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>825*</td>
<td>Polymeric Packaging Materials</td>
<td>Fall. 4(3-2) P: PKG 329 Physical and chemical properties of polymeric materials and structures commonly used in packaging and relationships to performance. QP: PKG 331 QA: PKG 810</td>
</tr>
<tr>
<td>835*</td>
<td>Experimental Design and Data Analysis in Packaging</td>
<td>Summer. 3(2-2) R: Graduate students. Design of packaging experiments and the use of statistical analysis software for personal computers. QP: PKG 331 PKG 332</td>
</tr>
<tr>
<td>890*</td>
<td>Special Investigations in Packaging</td>
<td>Fall, Spring, Summer. 1 to 3 credits. May enroll for a maximum of 4 credits. R: Graduate students. QP: PKG 331 PKG 332</td>
</tr>
<tr>
<td>891*</td>
<td>Selected Topics</td>
<td>Fall, Spring, Summer. 1 to 4 credits. May enroll for a maximum of 9 credits. R: Graduate students. QP: PKG 340</td>
</tr>
<tr>
<td>899*</td>
<td>Masters Thesis Research</td>
<td>Fall, Spring, Summer. 1 to 8 credits. May enroll for a maximum of 12 credits. R: Masters candidates. QP: PKG 389</td>
</tr>
</tbody>
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**PARK AND RECREATION RESOURCES**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>200</td>
<td>Leisure and Society</td>
<td>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. QP: PRR 200</td>
</tr>
<tr>
<td>210</td>
<td>Our National Parks and Recreation Lands</td>
<td>Fall, Spring, Summer. 3(3-0) Scope and history of federal recreation lands. Comparisons of national parks to other federal lands. Recreation and management in other nations. Future federal land management options. QP: PRR 210</td>
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<tr>
<td>213*</td>
<td>Introduction to Parks, Recreation, and Leisure</td>
<td>Fall, Spring, Summer. 3(2-0) R: Open to freshmen and sophomores. The scope and management of recreation services and resources. Historical and philosophical foundations. Influences on recreation behavior. Oral, national, international, economic, political and social institutions. QP: PRR 213 QA: PRR 351</td>
</tr>
<tr>
<td>215*</td>
<td>Recreation Program Management</td>
<td>Fall, Spring. 4(3-0) R: Open to freshmen. Programming and leadership principles for planning, management, and evaluation. Program design and conduct to service different clienteles, using leisure education, program development, and small group processes. Field trips required. QP: PRR 215</td>
</tr>
<tr>
<td>293*</td>
<td>Field Work in Park and Recreation Resources</td>
<td>Fall, Spring, Summer. 1(4-1) May enroll for a maximum of 3 credits. P: PRR 213, PRR 215 R: Junior and above. Professional field experience. Leadership development. Supervision in a park and recreation setting development. QP: PRR 203</td>
</tr>
<tr>
<td>303*</td>
<td>Environmental Attitudes and Concepts</td>
<td>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. QP: PRR 203</td>
</tr>
<tr>
<td>304*</td>
<td>Human Behavior in Park and Recreation Settings</td>
<td>Spring. 3(3-0) P: PRR 213, and one PSY course or one SOC course. Antecedent, 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</td>
</tr>
<tr>
<td>351*</td>
<td>Recreation and Natural Resources Communication</td>
<td>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</td>
</tr>
<tr>
<td>393*</td>
<td>Professional Seminar</td>
<td>Fall, Spring. 1(0-0) P: PRR 203. R: Open only to majors in Park and Recreation Recreation. Linkage of field work and internship. Integration of course work with professional practice. QP: PRR 320 QA: PRR 384</td>
</tr>
<tr>
<td>433*</td>
<td>Parks and Recreation Planning and Design Concepts</td>
<td>Spring. 4(2-4) P: PRR 213. 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 364</td>
</tr>
<tr>
<td>449*</td>
<td>Management of Natural Resource Based Recreation</td>
<td>Fall. 3(0-0) 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</td>
</tr>
<tr>
<td>467*</td>
<td>Programming in Therapeutic Recreation</td>
<td>Fall. 3(3-0) P: PRR 362 Comprehensive and individual program planning methods. Standards of practice, quality assurance, intervention techniques, professional ethics, and terminology. Field trips required. QP: PRR 362 QA: PRR 467</td>
</tr>
<tr>
<td>473*</td>
<td>Commercial Recreation and Tourism Enterprises</td>
<td>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 200 PRR 384 QA: PRR 470 PRR 471</td>
</tr>
<tr>
<td>474*</td>
<td>Community and Natural Resource Based Tourism</td>
<td>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. QP: PRR 213 PRR 213 PRR 213 PRR 213 QP: PRR 440 PRR 470 PRR 471</td>
</tr>
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*Courses with an asterisk (*) have not been approved by the University Committee on Curriculum.*