Descriptions — Osteopathic Medicine of Courses

545. Integrative Clinical Correlations V
Fall, Spring. 1-0-2
P: OST 544. R: Approval of college.
Application of systems biology information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty. 546. Integrative Clinical Correlations VI
Summer. 1-0-2
P: OST 545. R: Approval of college.
Application of systems biology information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty.

551. Issues in Minority Health
Fall, Spring, Summer. 3(3-0)
R: Open only to graduate and graduate-professional students in the Colleges of Osteopathic Medicine, Human Medicine, and Nursing or approval of college.
Patterns of health and illness in minority populations.
SA: CMS 515

590. Special Problems
Fall, Spring, Summer. 1 to 24 credits.
A student may earn a maximum of 60 credits in all enrollments for this course.
R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
Individual study directed by a faculty member on an experimental, theoretical, or applied problem.

OSTEOPATHIC MEDICINE OM
Department of Osteopathic Medicine
College of Osteopathic Medicine

512. Biostatistics and Epidemiology
Summer. 2(2-0)
R: Open only to graduate and graduate-professional students in the Colleges of Osteopathic Medicine, Human Medicine, and Nursing or approval of department.
Medical literature to illustrate statistical reasoning and research design. Emphasis on analysis rather than computation. Prospective or retrospective studies. Sensitivity, specificity, and predictive values. Epidemiologic terminology.
SA: CMS 512

590. Special Problems
Fall, Spring, Summer. 1 to 24 credits.
A student may earn a maximum of 48 credits in all enrollments for this course.
R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of department.
Each student works under faculty direction on an experimental, theoretical, or applied problem.

620. Directed Studies
Fall, Spring, Summer. 1 to 30 credits.
A student may earn a maximum of 48 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Individual or group work on special problems in medicine.

661. Obstetrics and Gynecology Clerkship
Fall, Spring, Summer. 1 to 9 credits.
A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Obstetric patient evaluation and management: motor skills, aptitudes, evaluation of postpartum patient and management of gynecologic problems.

653. Surgery Clerkship
Fall, Spring, Summer. 1 to 12 credits.
A student may earn a maximum of 12 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Surgical diagnosis, management, and treatment. Structure developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

664. Anesthesiology Clerkship
Fall, Spring, Summer. 1 to 4 credits.
A student may earn a maximum of 4 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Motor skills, concepts and principles, patient evaluation, management and therapy.

656. Orthopedic Clerkship
Fall, Spring, Summer. 1 to 20 credits.
A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Skeletal diagnosis, management, and therapy.

688. Otorhinolaryngology Clerkship
Fall, Spring, Summer. 1 to 20 credits.
A student may earn a maximum of 20 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Osteopathic Medicine upon completion of Units I and II.
Surgical diagnosis, management, and therapy.

530. Package Printing
Fall, Spring. 3(3-0)
P: PKG 310. R: Open only to Packaging students.
Methods of printing packages including copy preparation, design, electronic imaging, aesthetics, camera use, and effects of package materials. Production of printed packages including quality control, economics, and environmental considerations.

370. Packaging and the Environment
Spring. 3(3-0)
P: CEM 141; completion of Tier I writing requirement.
R: Not open to freshmen and sophomores.

415. Packaging Decision Systems
Fall, Spring. 3(2-2)
P: MTH 110 or MTH 116. CPS 100 or CPS 130 or CPS 151.
R: Open only to majors in Packaging.
Application of computers to analyze and solve problems in the management, specification, production, and testing of packaging systems.

452. Packaging Processes
Fall, Spring. 4(3-2)
P: PKG 320. PKG 325. R: Open only to Packaging students.

460. Automation in Packaging
Fall, Spring. 4(3-2)
P: MTH 124. R: Not open to freshmen and sophomores.
Integrated study of automatic device systems: configurations, components, sensors, drive mechanisms, and control systems. Robotic safety. Material handling, line inspection, vision systems, automated storage and retrieval systems. Economics. Field trips required.

452. Pharmaceutical Packaging
Fall, Spring. 4(3-2)
P: PKG 320 or PKG 325. R: Open only to Packaging students.
Special requirements for packaging pharmaceuticals and medical devices. Evaluation of package systems and packaging procedures.

455. Food Packaging
Spring. 3(3-1)
P: PKG 320. PKG 325. R: Open only to Packaging majors.
Food packaging systems related to specific products and processes. Product composition: problems and packaging solutions, shelf life considerations, and packaging lines.

460. Distribution Packaging and Performance Testing
Spring. 3(3-2)
P: PKG 310. R: Open only to Packaging majors.
Interrelationships between packaging and distribution systems. Transportation, material handling, warehousing, logistics, and management systems. Performance testing and industry practices. Package container design and testing.
475. Packaging Economics  
Fall, 3(3-0)  
P: EC 301 or EC 302. 
Economic issues in packaging as they relate to policies of the firm and of government. Relationships between economic policy and societal issues.

480. Packaging Laws and Regulations  
Spring, 2(3-0)  
P: PKG 320 or PKG 325. R: Open only to Packaging majors. 
History and development of packaging laws and regulations. Relationships among law, government regulation and commercial regulation. Effect of current laws and regulations on packaging.

485. Packaging Systems Development  
Fall, Spring, 3(3-1)  
P: PKG 432. R: Open only to seniors or graduate students in Packaging. 
Package development including selection, design and implementation of package systems for protection, distribution, merchandising, use and disposal.

490. Directed Studies in Packaging  
Fall, Spring, Summer, 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.  
P: PKG 320, PKG 325. R: Open only to Packaging majors. Approval of department; application required. 
Development of solutions to specific packaging problems. Supervised individual study.

491. Special Topics  
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. 
Selected topics of current interest.

492. Senior Seminar  
Fall, Spring, 1(2-0)  
R: Open only to seniors in Packaging. 
Seminar on current packaging issues, business organization and operations, and accepted practices in a corporate environment.

505. Advanced Packaging Dynamics  
Spring, 3(2-2)  
P: PKG 310.  

515. Permeability and Shelf Life  
Spring, 3(2-2)  
P: MTH 184 or MTH 182; PKG 320; PKG 325.  
Relationship between the storage life of packaged food and pharmaceutical products and the gas, moisture, and organic vapor permeability of packages in various environments.

517. Instruments for Analysis of Packaging Materials  
Fall of even-numbered years, 4(3-2)  
P: PKG 320, PKG 325.  

525. Polymeric Packaging Materials  
Fall, 4(3-2)  
P: PKG 320.  
Physical and chemical properties of polymeric materials and structures used in packaging. Relationship of properties to performance.

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

890. Independent Study in Packaging  
Fall, Spring, Summer, 1 to 3 credits. A student may earn a maximum of 4 credits in all enrollments for this course.  
P: Open only to graduate students in Packaging. Approval of department; application required. 
Special investigations of unique packaging problems.

891. Selected Topics  
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.  
P: Open only to graduate students in Packaging. 
Selected topics of interest to graduate packaging students.

899. Master's Thesis Research  
Fall, Spring, Summer, 1 to 8 credits. A student may earn a maximum of 99 credits in all enrollments for this course.  
P: Open only to Master's students in Packaging.

PARK AND RECREATION RESOURCES  
PRR  
Department of Park, Recreation and Tourism Resources  
College of Agriculture and Natural Resources

100. Recreation in Michigan Natural Resources  
Spring, 3(3-0)  
The scope and status of Michigan natural resources used for recreation. Historical and philosophical foundations of management and policy. Analysis of contemporary environmental and recreational policy issues.

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.

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.

213. Introduction to Parks, Recreation, and Leisure  
Fall, Spring, Summer, 3(3-0)  
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.

215. Recreation Program Management  
Fall, Spring, 4(3-0)  
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.

293. Field Work in Park and Recreation Resources  
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.  
P: PRR 213, PRR 215, R: Open only to students in Park and Recreation Resources. Approval of department. 
Professional field experience in a park or recreation setting.

300B. Coaching Sports for Athletes with Disabilities  
Spring of even-numbered years, 2(2-0)  

302. Environmental Attitudes and Concepts  
Fall, 3(3-0)  
P: One IS 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.

320. Human Behavior in Park and Recreation Settings  
Spring, 3(3-0)  
P: 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.

351. Recreation and Natural Resources Communication  
Fall, 3(2-2)  
P: PRR 213. R: Not open to freshmen.  
Principles of communication for recreation and natural resource audiences. Application to various forms of interpretation media including verbal, graphic, and written. Field trips required.

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

370. Administration and Operation of Parks and Recreation Systems  
Fall, 4(4-0)  
P: PRR 215, PRR 351. R: Not open to freshmen and sophomores. 
Policy, administration, and operations at municipal, county, and regional levels. Policy and administrative development of systems. Preparation and implementation of operation and maintenance plans and schedules.

371. Management of Park and Recreation Agencies and Organizations  
Spring, 4(4-0)  
P: ACC 250, PRR 313, PRR 215. R: Not open to freshmen and sophomores. 
Management and operating concepts and methods. Revenues and cost management, service marketing, staffing and supervision.