OSTEOPATHIC MEDICINE

620**. *Directed Studies
Fall, Spring, Summer. 2 to 30 credits in increments of 2 credits. May reenroll for a maximum of 30 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Units I and II.
Individual or group work on special problems in medicine.
QA: OM 620

651**. *Obstetrics and Gynecology Clerkship
Fall, Spring, Summer. 2 to 8 credits in increments of 2 credits. May reenroll for a maximum of 8 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Units I and II.
Obstetric patient evaluation and management: motor skills, aptitudes, evaluation of postpartum patient and management of gynecologic problems.
QA: OM 651

653**. *Surgery Clerkship
Fall, Spring, Summer. 2 to 8 credits in increments of 2 credits. May reenroll for a maximum of 8 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. 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, therapy.
QA: OM 653

654**. *Anesthesiology Clerkship
Fall, Spring, Summer. 2 to 4 credits in increments of 2 credits. May reenroll for a maximum of 4 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Units I and II.
Motor skills, concepts and principles, patient evaluation, management and therapy.
QA: OM 654

656**. *Orthopedic Clerkship
Fall, Spring, Summer. 4 to 10 credits in increments of 2 credits. May reenroll for a maximum of 30 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Units I and II.
Program developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.
QA: OM 656

658**. *Otorhinolaryngology Clerkship
Fall, Spring, Summer. 4 to 10 credits in increments of 2 credits. May reenroll for a maximum of 30 credits.
R: Open only to graduate-professional students in the College of Osteopathic Medicine. Units I and II.
Develop proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.
QA: OM 658

OSTEOPATHIC MEDICINE OST

501. *Clinical Skills I
Fall. 3(01-04)
R: Graduate-professional students in College of Osteopathic Medicine.
Introduction to osteopathic physical examination.
QP: OST 530OST 531

502. *Clinical Skills II
Spring. 3(01-04)
P: OST 501 R: Graduate-professional students in College of Osteopathic Medicine.
Continuation of OST 501.
QP: OST 531

504. *Doctor/Patient Relationship I
Fall. 1(00-02)
R: Graduate-professional students in College of Osteopathic Medicine.
Basics of interpersonal communication related to physician interaction with patients.
QP: OST 530OST 531

505. *Doctor/Patient Relationship II
Spring. 1(00-02)
P: OST 504 R: Graduate-professional students in College of Osteopathic Medicine.
Skills of interviewing patients for the purposes of gathering information, giving information, and patient motivation.
QP: OST 531OST 532

511**. *Systems Biology: Neuromusculoskeletal I
Summer. 8(05-06)
P: ANT; PSL; OST; PTH; CMS R: GRAD. PROFESS. STUD. IN COLLEGE OF OSTEOPATHIC MEDICINE
A multidisciplinary approach to the neuromusculoskeletal system providing functional integration of basic science and clinical information along with osteopathic manual medicine.

512**. *Systems Biology: Neuromusculoskeletal II
Fall. 6(04-02)
P: OST 511 R: College of Osteopathic Medicine students only
A multidisciplinary approach to the neuromusculoskeletal system providing functional integration of basic science and clinical information along with osteopathic manual medicine.
QA: OST 560 OST 553 OST 614 OST 615 OST 616

513**. *Systems Biology: Neuromusculoskeletal III
Spring. 5(04-01)
P: OST 512 R: College of Osteopathic Medicine students only
Multidisciplinary approach to the neuromusculoskeletal system providing functional integration of basic science and clinical information along with osteopathic manual medicine.
QA: OST 560 OST 553 OST 614 OST 614 OST 616

516**. *Systems Biology: Behavioral I
Fall. 3(03-00)
P: ANT 552; OST 501; OST 511, PHM 563 R: College of Osteopathic Medicine students only
A multidisciplinary approach to behavior function on normal human development, behavioral and cultural medicine, and chronic illness and disability.
QA: PST 520

517**. *Systems Biology: Behavioral II
Spring. 3(03-00)
P: ANT 552; OST 501, 502, 511, 516; PHM 563 R: College of Osteopathic Medicine students only
A multidisciplinary approach to behavior with focus on psychopathology and substance abuse.
QP: PSC 520 QA: PSC 521 PED 580

521**. *Systems Biology: Hematopoietic
Fall. 2(02-00)
P: BCH 521; MPH 522; ANT 551, 563; PTH 542; PHM 563 R: College of Osteopathic Medicine students only
A multidisciplinary course to the hematopoietic system providing functional integration of the clinical and basic science information.
QA: PTH 540 OST 554

522**. *Systems Biology: Gastrointestinal
Fall. 6(06-00)
P: ANT 551, 562; PSL 501; MPH 522; BCH 521; PHM 563; PTH 542 C: Integrative Clinical Correlations IV R: College of Osteopathic Medicine students only
A multidisciplinary approach to the gastrointestinal system providing functional integration of basic science and clinical information.
QP: ANT 560 ANT 565PSL 500AMPH 521BCH 502 QA: OST 557

523**. *Systems Biology: Genitourinary
Fall. 6(05-02)
P: ANT 551, 562; PSL 501; MPH 522; PTH 542; PHM 563 C: Integrative Clinical Correlations IV R: College of Osteopathic Medicine students only
A multidisciplinary approach to the urinary system providing functional integration of basic science and clinical information.
QP: ANT 560 ANT 565PSL 500AMPH 521BCH 502 QA: OST 556

526**. *Systems Biology: Integumentary
Summer. 2(02-00)
P: ANT 551, 562; MPH 522; PTH 542; PHM 563 R: College of Osteopathic Medicine students only
A multidisciplinary approach to the integumentary system providing a functional integration of basic science and clinical information.
QP: ANT 560 ANT 565PSL 500AMPH 521BCH 502 QA: OST 552

527**. *Systems Biology: Reproductive
Summer. 7(07-00)
P: ANT 551, 562; PSL 501; BCH 521; MPH 522; PHM 563 C: Integrative Clinical Correlations IV R: College of Osteopathic Medicine students only
A multidisciplinary approach to the female reproductive system providing functional integration of basic science and clinical information in obstetrics and gynecology.
QP: ANT 560 ANT 565PSL 500AMPH 521BCH 502 QA: OST 559

531**. *Systems Biology: Endocrinology
Fall. 2(02-00)
P: PSL 501; ANT 553; BCH 551 R: College of Osteopathic Medicine students only
A multidisciplinary approach to endocrinology providing functional integration of basic science and principles of clinical diagnosis and treatment.
QA: OST 520

541. *Integrative Clinical Correlations I
Fall. 1(00-02)
R: Graduate-professional students in College of Osteopathic Medicine.
Application of basic science information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty.

542. *Integrative Clinical Correlations II
Spring. 1(00-02)
P: OST 541.
Application of basic science information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty.

543. *Integrative Clinical Correlations III
Summer. 1(00-02)
P: OST 542.
Application of basic science information, problem-solving, and clinical skills in an integrated clinical case format. Case presentations by students and faculty.

544**. *Integrative 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**. *Integrative 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**. *Integrative 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; PSL 501; MPH 551; PTH 542; PHM 563 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; PSL 501; MPH 522; BCH 521; PHM 563 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 management skills and advanced cardiac life support (ACLS).
QP: ANT 565 PSL 500AMPH 521BCH 502PHM 520 QA: OST 555

PACKAGING PKG

210. *Principles of Packaging
Fall, Spring, Summer. 3(3-0)

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(3-2)
P: MTH 124 or MTH 132; PHY 232. R: Open only to Packaging majors.
Testing, evaluating, and predicting package performance under various environmental conditions. Methods of protection against shock, vibration, and other environmental hazards.
QP: PHY 239 MTH 112ORMTH 122 QA: PKG 321 PKG 423

320**. *Plastic and Glass Packaging
Fall, Spring. 4(3-2)
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.
QP: PKG 321 CEM 143 QA: PKG 331

325**. *Paper and Metal Packaging
Fall, Spring. 4(3-2)
P: CEM 143, PKG 310. R: Open only to Packaging majors.
Physical and chemical properties, manufacture, conversion and use of wood, paper, paperboard, metal foils and related components. Design, use and evaluation of packages.
QP: PKG 321 CEM 143 QA: PKG 332

330**. *Package Printing
Fall. 3(3-0)
P: PKG 310. R: Open only to Packaging majors.
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.
QP: PKG 321 QA: PKG 330

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.
Effects of packaging on environmental quality. Solid waste. Air and water quality. Laws, economics and energy. Resource use and conservation.
QP: CEM 141 QA: PKG 340

415**. *Packaging Decision Systems
Fall, Spring. 3(2-2)
P: MTH 110 or MTH 116 R: Junior or above Packaging
Structure and use of decision systems in the packaging function for management, specification, production and testing. Use of microcomputers to support decisions.
QP: MTH 109 ORMTH 111 QA: PKG 467

432**. *Packaging Processes
Fall, Spring. 4(3-2)
P: PKG 320, PKG 325. R: Open only to Packaging majors.
Integrated study of machines, organization and control of packaging processes. Application of pneumatics, hydraulics and electricity. Interrelationship of product, packaging and machinery.
QP: PKG 331 PKG 332 QA: PKG 430 PKG 425

440**. *Automation in Packaging
Fall. 3(3-0)
P: MTH 124. R: Not open to freshmen and sophomores.
Automated 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.
QP: MTH 112 QA: PKG 465

452**. *Pharmaceutical Packaging
Fall. 4(3-2)
P: PKG 320 or PKG 325.
Special requirements for packaging pharmaceuticals and medical devices. Evaluation of package systems and packaging procedures.
QP: PKG 331 ORPKG 332 QA: PKG 438

455**. *Food Packaging
Spring. 3(3-1)
P: PKG 320, PKG 325. R: Open only to Packaging majors.
Food package systems related to specific products and processes. Product composition: problems and packaging solutions, shelf life considerations, and packaging lines.
QP: PKG 331 PKG 332 QA: PKG 455

460**. *Distribution Packaging and Performance Testing
Spring. 3(2-2)
P: PKG 310.
Interrelationships between packaging and distribution systems. Transportation, material handling, warehousing. Logistics and management systems. Performance testing and industry practices. Package container design and testing.
QP: PKG 321 PKG 423 QA: PKG 435 PKG 433

475**. *Packaging Economics
Fall. 3(3-0)
P: EC 201 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.
QP: EC 201 OREC 202 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 current laws and regulations on packaging.
QP: PKG 331 ORPKG 332 QA: PKG 450

485**. *Packaging Systems Development
Fall, Spring. 3(3-1)
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.
QP: PKG 423 PKG 425 QA: PKG 428

490**. *Directed Studies in Packaging
Fall, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 6 credits.
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.
QP: PKG 331 PKG 332 QA: PKG 424

491**. *Special Topics
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits.

Selected topics of current interest.
QA: PKG 440

492**. *Senior Seminar
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.
QA: PKG 463

805**. *Advanced Packaging Dynamics
Spring. 3(2-2)
P: PKG 310
Advanced topics in shock and vibration. Distribution hazards and product fragility. Cushion performance and package design. Environmental measurement and simulation.
QP: PKG 423 QA: PKG 823

815**. *Permeability and Shelf Life
Spring. 3(2-2)
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 organic vapor permeability of packages in various environments.
QP: PKG 331 PKG 332MTH 113 QA: PKG 820