

502 Osteopathic Manipulative Medicine II
Spring. 1(0-2) P:M: (OMM 501) R: Open only to students in the College of Osteopathic Medicine.

Muscle energy continued followed by osteopathic diagnosis and treatment using hi velocity low amplitude (mobilization with impulse) techniques.

503 Osteopathic Manipulative Medicine III
Summer. 1(0-2) P:M: (OMM 502) R: Open only to students in the College of Osteopathic Medicine.

Osteopathic diagnosis and treatment using functional indirect and myofascial release techniques.

504 Osteopathic Manipulative Medicine IV
Fall. 1(0-2) P:M: (PHM 563 and RAD 553 and OST 511 and OMM 503) R: Open only to students in the College of Osteopathic Medicine.

Osteopathic diagnosis and treatment using craniosacral techniques and various osteopathic manipulative approaches to the extremities.

505 Osteopathic Manipulative Medicine V
Spring. 1(0-2) P:M: (OMM 504) R: Open only to students in the College of Osteopathic Medicine.

Application of osteopathic palpatory skills and treatment modalities in the approach to patients in various systems such as pulmonary and cardiovascular.

506 Osteopathic Manipulative Medicine VI
Summer. 1(0-2) P:M: (OMM 505) R: Open only to students in the College of Osteopathic Medicine.

Continued integration of osteopathic manipulative treatment in patient care in preparation for clinical curriculum.

509 Special Problems in Biomechanics
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 and graduate-professional students in the College of Osteopathic Medicine. Approval of department. SA: BIM 590

Each student works under faculty direction on an experimental, theoretical, or applied problem.

601 Osteopathic Manipulative Medicine Clerkship
Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 30 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. SA: BIM 601, BIM 601

Advanced training in the diagnosis of musculoskeletal dysfunction and application of osteopathic manipulative techniques.

620 Directed Studies
Fall, Spring, Summer. 1 to 30 credits. A student may earn a maximum of 30 credits in all enrollments for this course. SA: BIM 620

Individual or group work on special problems related primarily to the biomechanics of the musculoskeletal system.

800 Special Topics
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. SA: BIM 800

Directed study in topics of biomechanics.

890 Independent Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 22 credits in all enrollments for this course. R: Approval of department. SA: BIM 890

Individual or group work related to biomechanics and/or neuromuscular system.

899 Master's Thesis Research
Fall, Spring, Summer. 0(2-2) A student may earn a maximum of 25 credits in all enrollments for this course. SA: BIM 899

Master's thesis research.

OSTEOPATHIC MEDICINE

OST

College of Osteopathic Medicine

401 Selected Topics in Osteopathic Medicine
Fall, Spring. 1(1-0) RB: Student with academic interest and career focus toward medicine and the health sciences.

Classical, current and innovative osteopathic medical trends in patient treatment and care.

501 Clinical Skills I
Fall. 2(1-2) R: Open only to graduate-professional students in the College of Osteopathic Medicine.

Introduction to osteopathic physical examination.

502 Clinical Skills II
Spring. 2(1-2) P:M: (OST 501 or concurrently and ANTR 551) R: Open only to graduate-professional students in the College of Osteopathic Medicine.

Continuation of OST 501.

504 Doctor/Patient Relationship I
Fall. 1(0-2) R: Graduate-professional students in College of Osteopathic Medicine.

Basics of interpersonal communication related to physician interaction with patients.

505 Doctor/Patient Relationship II
Spring. 1(0-2) P:M: (OST 504) R: Open only to graduate-professional students in the College of Osteopathic Medicine.

Skills of interviewing patients for the purposes of gathering information, giving information, and patient motivation.

511 Systems Biology: Neuromusculoskeletal I
Summer. 7(5-4) P:M: (ANTR 551 and OST 501 and PTH 542 and BMB 514 and OMM 501 and OST 505 and BMB 526 and NOP 552 and OST 502 and PSL 534 and PSL 535 and OMM 502 and OST 504 and MMG 522) R: Open only to graduate-professional students in the College of Osteopathic Medicine. Approval of college.

Multidisciplinary approach to the peripheral neuromusculoskeletal system. Integration of basic science and clinical information.

512 Systems Biology: Neuromusculoskeletal II
Fall. 5(4-2) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) R: Open only to graduate-professional students in the College of Osteopathic Medicine.

Multidisciplinary approach to the neuromusculoskeletal system. Central nervous system and ophthalmology. Integration of basic science and clinical information.

513 Systems Biology: Neuromusculoskeletal III
Spring. 5(3-4) RB: (OST 512) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.

Multidisciplinary approach to the neuromusculoskeletal system. Emphasis on ophthalmology, rheumatology, and orthopedics. Integration of basic science and clinical information with osteopathic manual medicine.

517 Systems Biology: Behavior II
Spring. 2(2-0) RB: (OST 516) R: Open only to graduate-professional students in College of Osteopathic Medicine.

A multidisciplinary approach to behavior. Focus on psychopathology, chronic illness and disability, health policy and terminal care.

519 Ethics, Policy and Jurisprudence
Spring. 2(2-0) P:M: (OST 512 and OST 529 and OST 530 and OST 527 and OMM 504 and FCM 640 and OST 522) R: Open only to graduate and graduate-professional students in the colleges of Osteopathic Medicine, Human Medicine and Nursing or approval of department.

Key issues in ethics, policy and law encountered in the practice of medicine.

520 Behavioral Medicine System
Fall, Spring. 3(3-0) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) R: Open only to graduate-professional students in the College of Osteopathic Medicine. SA: OST 516

Health promotion models, health behavior, stress and coping, models of substance abuse, substance abuse screening and interventions, human sexuality, psychosocial aspects of chronic illness, understanding and treating pain.

521 Systems Biology: Hematopoietic
Fall. 2(2-0) P:M: (OMM 504 and OST 527 and FCM 640 and OST 522 and OST 530 and OST 512 and OST 529 and OST 520) RB: (ANTR 551 and ANT 563 and BMB 521 and MMG 522 and PHM 563 and PTH 542) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.

Multidisciplinary approach to the hematopoietic system. Hematopoiesis, clotting, and hematopoietic pathologies. Integration of clinical and basic science information.

522 Systems Biology: Gastrointestinal
Fall. 5(5-0) P:M: (OST 511 and PHM 563 and RAD 553 and OMM 503) R: Open only to graduate-professional students in the College of Osteopathic Medicine.

Multidisciplinary approach to the gastrointestinal system. Normal structure and function, and pathologies. Integration of basic science and clinical information.

Osteopathic Medicine—OST

- 523 Systems Biology: Genitourinary**
Spring. 3(3-0) P:M: (OST 512 and OMM 504 and OST 522 and FCM 640 and OST 529 and OST 527 and OST 530) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
Multidisciplinary approach to the urinary system. Normal structure and function and pathologies of the urinary and male reproductive systems. Integration of basic science and clinical information.
- 524 Systems Biology: Cardiovascular**
Spring. 8(7-2) P:M: (OST 512 and OST 530 and OMM504 and OST 530 and OST 522 and OST 529 and OST 527) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
Multidisciplinary approach to the cardiovascular system. Normal structure and function and pathologies. Integration of basic science and clinical information.
- 525 Systems Biology: Respiratory**
Spring. 5(4-2) P:M: (OST 512 and OST 527 and OMM 504 and OST 530 and OST 522 and FCM 640 and OST 529) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
Multidisciplinary approach to the respiratory system. Normal structure and function and pathologies. Integration of basic science and clinical information.
- 526 Systems Biology: Integumentary**
Summer. 2(2-0) P:M: (OMM 505 and OST 525 and FCM 650 and OST 523 and OST 521 and OST 524 and OST 519 and OST 520) R: Open only to graduate-professional students in College of Osteopathic Medicine. Approval of college.
Multidisciplinary approach to the integumentary system. Diagnosis and treatment of integumentary pathologies. Integration of basic science and clinical information.
- 527 Systems Biology: Female Reproductive**
Fall. 4(4-0) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) R: Open only to graduate-professional students in the College of Osteopathic Medicine.
Multidisciplinary approach to the female reproductive system. Normal structure and function, and pathologies. Integration of basic science and clinical information in obstetrics and gynecology.
- 528 Systems Biology: Growth and Development**
Summer. 3(3-0) P:M: (OST 525 and OMM 505 and OST 524 and OST 523 and OST 521 and FCM 650 and OST 520 and OST 519) R: Open only to graduate-professional students in College of Osteopathic Medicine.
Multidisciplinary approach to growth and development. Normal structure and function, and pathologies. Integration of basic science and clinical information.
- 529 Systems Biology: Endocrinology**
Fall. 2(2-0) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) R: Open only to graduate-professional students in the College of Osteopathic Medicine.
Multidisciplinary approach to endocrinology. Normal endocrine function and the principles of diagnosis and treatment of endocrine disorders. Integration of basic science and clinical information.
- 530 Psychopathology**
Fall. 1(1-0) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) R: Open only to graduate-professional students in the College of Osteopathic Medicine.
Overview of psychopathology, Diagnostic and Statistical Manual of Mental Disorders, Edition IV (DSM-IV).
- 531 Biostatistics and Epidemiology**
Summer. 2(2-0) P:M: (OST 521 and OST 523 and OST 520 and OMM 505 and OST 519 and FCM 650 and OST 524 and OST 525) R: Open only to graduate or graduate-professional students in the Colleges of Osteopathic Medicine, Human Medicine, and Nursing or approval of department. SA: CMS 512, OM 512, IM 512
Exposure to the tools necessary to read and understand epidemiological and other medical research articles.
- 535 Principles of Geriatrics**
Summer. 2(2-0) P:M: (OMM 505 and OST 525 and FCM 650 and OST 523 and OST 521 and OST 524 and OST 519 and OST 520) R: Open only to graduate-professional students in the Colleges of Osteopathic and Human Medicine or approval of department. SA: CMS 522
Lectures, readings, tapes, small group seminars, and home visits related to normal aging epidemiology. Major chronic diseases and other issues of geriatric care.
- 536 Behavioral System**
Fall. 2(2-0) P:M: (OST 511 and PHM 563 and OMM 503 and RAD 553) Not open to students with credit in OST 520.
Health promotion models, health behavior, stress and coping, and human sexuality.
- 537 Substance Abuse**
Spring. 1(1-0) P:M: (OMM 504 and OST 527 and OST 530 and OST 522 and FCM 640 and OST 512 and OST 536 and OST 529) Not open to students with credit in OST 520.
Substance abuse models, screening and interventions.
- 538 Chronic Illness**
Spring. 1(1-0) P:M: (OMM 504 and FCM 640 and OST 527 and OST 512 and OST 530 and OST 536 and OST 522 and OST 529) Not open to students with credit in OST 520.
Psychosocial aspects of chronic illness. Understanding and treating pain.
- 540 Aspects of Clinical Medicine**
Summer. 2(1-1) P:M: (ANT 551 and PSL 534 and NOP 552 and RAD 552 and PSL 535 and OMM 505 and OST 511 and BCH 514 and BCH 526 and OST 502 and OST 505 and MMG 522 and PTH 542 and PHM 563 and OST 529) and (OST 512 and OST 522 and OST 527 and OST 520 and OST 530 and OST 524 and OST 525 and OST 523 and OST 521 and OST 519 and FCM 640 and FCM 650)
Correlation of information gathering and clinical decision-making related to common patient presenting symptoms.
- 560 Neuropathology Problem Solving Exercises**
Fall, Spring, Summer. 2(0-4) Interdepartmental with Human Medicine. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine. SA: PTH 525
Independent study of neuropathology problem solving exercises.
- 561 Basic Principles of Pathology**
Spring. 2 credits. Interdepartmental with Human Medicine. Administered by College of Human Medicine. R: Graduate-professional students in colleges of Human and Osteopathic Medicine. SA: PTH 542
Fundamental pathologic processes. Clinical applications.
- 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.
- 600 Spanish For Medical Terminology**
Fall, Spring. 1(1-0) A student may earn a maximum of 2 credits in all enrollments for this course. RB: Some basic Spanish experience/conversation.
Practicing patient interview skills in Spanish.
- 602 Primary Care Ambulatory Clerkship**
Fall, Spring, Summer. 1 to 36 credits. A student may earn a maximum of 36 credits in all enrollments for this course. Interdepartmental with Internal Medicine; Osteopathic Surgical Specialties; Pediatrics; Psychiatry; Family and Community Medicine. RB: Successful completion of the preclerkship requirements in College of Osteopathic Medicine Units I and II.
A 24-week ambulatory care continuity experience involving 12 weeks in a multidisciplinary environment (family medicine, pediatrics, and internal medicine), 4 weeks in family medicine and 8 weeks in specialty areas (internal medicine, surgery, pediatrics, and obstetrics and gynecology). Didactic sessions are scheduled concurrently.
- 609 Laboratory Medicine Clerkship**
Fall, Spring, Summer. 1 to 8 credits. Fall: Flint G.Rapids Kalamazoo Lans Saginaw UP. Spring: Flint G.Rapids Kalamazoo Lans Saginaw UP. Summer: Flint G.Rapids Kalamazoo Lans Saginaw UP. A student may earn a maximum of 16 credits in all enrollments for this course. Interdepartmental with Human Medicine. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine. SA: PTH 609
Laboratory procedures. Correlation of laboratory data with morphologic abnormalities in patients with pathophysiology.

610 Pathology Clerkship
 Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 12 credits in all enrollments for this course. Interdepartmental with Human Medicine. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine or Osteopathic Medicine. SA: PTH 608
 Anatomic and clinical pathology with emphasis on clinical-pathological correlation. Conducted in pathology departments of affiliated hospitals.

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. SA: OM 620, OM 620
 Individual or group work on special problems in medicine.

651 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. SA: OM 651, OM 651
 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. SA: OM 653, OM 653
 Surgical diagnosis, management, and treatment. Structure developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, therapy.

654 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. SA: OM 654, OM 654
 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 30 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. SA: OM 656, OM 656
 Program developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

658 Otorhinolaryngology Clerkship
 Fall, Spring, Summer. 1 to 20 credits. A student may earn a maximum of 30 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. SA: OM 658, OM 658
 Develop proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.

OFFICE OF THE PROVOST **PRO**

Office of the Provost

101 Freshman Seminar
 Fall, Spring. 0 to 1 credits. A student may earn a maximum of 2 credits in all enrollments for this course. R: Open only to freshmen.
 Introduction to the academic life of the University. Special topics proposed by faculty to engage the interests of new students.

OSTEOPATHIC SURGICAL SPECIALTIES **OSS**

Department of Osteopathic Surgical Specialties
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. SA: CMS 512, OM 512
 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.

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 the College of Osteopathic Medicine. Approval of department. SA: OM 590
 Each student works under faculty direction on an experimental, theoretical, or applied problem.

602 Primary Care Ambulatory Clerkship
 Fall, Spring, Summer. 1 to 36 credits. A student may earn a maximum of 36 credits in all enrollments for this course. Interdepartmental with Internal Medicine; Osteopathic Medicine; Pediatrics; Psychiatry; Family and Community Medicine. RB: Successful completion of the preclerkship requirements in College of Osteopathic Medicine Units I and II.
 A 24-week ambulatory care continuity experience involving 12 weeks in a multidisciplinary environment (family medicine, pediatrics, and internal medicine), 4 weeks in family medicine and 8 weeks in specialty areas (internal medicine, surgery, pediatrics, and obstetrics and gynecology). Didactic sessions are scheduled concurrently.

PACKAGING **PKG**

School of Packaging
College of Agriculture and Natural Resources

101 Principles of Packaging
 Fall, Spring, Summer. 3(3-0) SA: PKG 210
 Packaging systems, materials and forms and their relationship to the needs and wants of society.

221 Packaging with Glass and Metal
 Fall, Spring. 3(3-0) P:M: (CEM 141 or CEM 151 or LBS 171) and (PHY 231 or PHY 231B or PHY 231C or PHY 183 or PHY 183A or PHY 183B or PHY 193H or LBS 271) and (PKG 101 or concurrently) SA: PKG 320, PKG 325
 Physical and chemical properties of glass and metals and their applications to packaging.

322 Packaging with Paper and Paperboard
 Fall, Spring. 4(3-2) P:M: (PKG 221 or concurrently and PKG 101) and (MTH 124 or MTH 132 or LBS 118 or MTH 152H) and (CEM 143 or CEM 251 or CEM 351) and (STT 200 or STT 201 or STT 315 or STT 351) R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 325
 Physical and chemical properties, manufacture, conversion, and use of wood, paper, paperboard, and related components in packaging. Design, use, and evaluation of packages.

323 Packaging with Plastics
 Fall, Spring. 4(3-2) P:M: (PKG 221 or concurrently and PKG 101) and (CEM 143 or CEM 251 or CEM 351) and (STT 200 or STT 201 or STT 315 or STT 351) and (MTH 124 or MTH 132 or LBS 118 or MTH 152H) R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 320
 Physical and chemical properties of plastics and their relationship to selection, design, manufacture, performance, and evaluation of packages.