

MICHIGAN STATE
UNIVERSITY

College of
Osteopathic Medicine



2017-18
COURSE CATALOG

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Overview of the Doctor of Osteopathic Medicine Program

The College of Osteopathic Medicine at Michigan State University (MSUCOM) offers a four-year curriculum leading to the degree of Doctor of Osteopathic Medicine (D.O.). The program is accredited by the American Osteopathic Association Commission on Osteopathic College Accreditation.

Since its inception in 1970, MSUCOM's mission has been to prepare physicians in the science of medicine, the art of caring and the power of touch with a world-view open to all people. This emphasis is reflected in a strong foundation in the basic and clinical sciences that is complemented by supervised patient contact within MSUCOM's Statewide Campus System, a network of hospitals, clinics, and providers throughout Michigan.

Throughout the curriculum, students develop clinical skills within a framework of osteopathic principles. These principles are manifested in helping students to:

- Understand how physical, psychosocial, and lifestyle factors influence health and disease
- Recognize the interrelationship of body systems in holistic ways
- Apply biomechanical concepts and treatments to improve function and quality of life
- Develop strategies to promote their own personal well-being as future physicians.

Admission

The science and practice of osteopathic medicine require an understanding of the relationships among the physical, biological, psychological, cultural, and environmental aspects of human behavior. Thus, osteopathic education requires preparation in the natural, social, and behavioral sciences and the humanities. Candidates are expected to demonstrate their ability to work and think independently and in a scholarly manner. The mean grade-point average of students who are admitted to the program is 3.5 to 3.6.

Applicants for admission to the first-year class in the college must meet the following minimum requirements:

- Completion of at least 90 semester credits within a college or university accredited by a regional accrediting commission of higher education.
- Completion of eight semester credits of biology with no grade below 2.0, including both course work and laboratory work in general biology or general zoology.
- Completion of 16 semester credits of chemistry, including three semester credits of biochemistry, with no grade below 2.0.
- Completion of 6 semester credits of English—including both oral and written English, with no grade below 2.0.
- The Medical College Admission Test (MCAT) must be taken by the end of September of the year application is being made. Scores may not be more than three years old.
- Suggested science course electives include anatomy, physiology, microbiology, histology, and statistics at the 300- and 400-levels.
- Suggested medical humanities and ethics electives include course work in philosophy, history of medicine and medical ethics.

An application must be completed and all official transcripts submitted to the American Association of Colleges of Osteopathic Medicine Application Service ([AACOMAS](#)): it is highly recommended that the application be submitted no later than June 1 of the application year for students who wish to begin classes the following spring. The Michigan State University College of Osteopathic Medicine forwards to all applicants a secondary application. Early application is essential because the college admits its students on a rolling basis. Michigan State University College of Osteopathic Medicine classes begin in June. Most Admissions Committee reviews are conducted between September and March. Selection of students for the incoming class and for the waiting list is generally completed by early April.

Curriculum

The curriculum leading to the Doctor of Osteopathic Medicine (D.O.) degree includes six semesters of classroom and laboratory courses, one semester of classroom to clinic transitional course, and five semesters of community-based clinical courses. It is designed to meet the following educational objectives:

- To assist students in the integration of basic science, behavioral science, and clinical science concepts related to the tenets of osteopathic philosophy.
- To provide the student with comprehensive medical knowledge and skills which will serve as a foundation for a lifetime of learning.
- To produce osteopathic physicians with the skills necessary to enable them to enter graduate medical education in a primary care, medical or surgery specialty program.

The curriculum is divided into two components: the preclerkship curriculum, presented in the first two years; and the clinical clerkship curriculum, scheduled in the third and fourth years.

Preclerkship Curriculum

Course focus in the first two semesters is on introductory basic sciences: anatomy, biochemistry, genetics, pathophysiology, cell biology, microbiology, immunology, and pharmacology. Courses in the following four semesters are focused on the body systems: neuromusculoskeletal, genitourinary, endocrine, reproductive, gastrointestinal, integumentary, pediatrics, hematopoietic, cardiovascular, respiratory and geriatrics with instructional input provided by basic science, behavioral science and clinical faculty.

Clinical skills developed through osteopathic patient care, preceptor and osteopathic manipulative medicine courses are offered in semesters two through six. In addition, the curriculum offers ethics, professionalism and law.

Clerkship Curriculum

The clinical clerkship curriculum includes 84 weeks of clinical training in community hospitals, clinics, and private practice offices affiliated with the college from across the State of Michigan.

The third year curriculum consists of 48 weeks, including ambulatory family medicine, ambulatory internal medicine, ambulatory or in-patient pediatrics, in-patient internal medicine, neurology, psychiatry, obstetrics/gynecology, general surgery, and emergency medicine each in 4-week blocks. In addition, anesthesia and radiology each in 2-week blocks.

The fourth year curriculum consists of 36 weeks. Of those weeks 36 weeks, 16 are required to be completed within our Statewide Campus System hospitals. The remaining 20 weeks are required to be completed within either the Statewide Campus System or any institution approved by the College of

Osteopathic Medicine with advanced planning and scheduling on the part of the student. Within the 36 weeks, students will be required to complete 8 weeks in a surgical field and 12 weeks in a medicine related field. A list of possible rotations for each field is available from the College of Osteopathic Medicine.

Requirements for Graduation

To graduate from Michigan State University with a Doctor of Osteopathic Medicine (D.O.) degree, a student must satisfactorily complete all required courses, pass COMLEX-USA Level 1, Level 2CE and Level 2PE examinations of the National Board of Osteopathic Medical Examiners.

In addition, each student must complete four years of Responsible Conduct of Research (RCR) training and receive the endorsement of the Committee on Student Evaluation (COSE) and an affirmative vote from the faculty of the College. The Policy for Promotion, Retention and Graduation is available to each student online upon admission to the College of Osteopathic Medicine.

MSUCOM Educational Program Objectives

In addition to the core competencies, MSUCOM has identified a series of Program Objectives that define the knowledge, skills and attitudes/behaviors that are expected of students prior to graduation.

Knowledge: The MSUCOM student will understand:

- K1. Normal structure-function relationships that provide a basis for understanding and treating disease.
- K2. Biological mechanisms governing homeostasis.
- K3. Principles of preventive medicine and health promotion.
- K4. Genetic, biochemical, microbiologic, immunologic, physiologic and environmental mechanisms that underlie disease states and their treatment.
- K5. The manifestations and consequences of illness at various stages of life.
- K6. Clinical, laboratory, radiologic and pathologic manifestations of disease states.
- K7. Mechanisms of drug action, pharmacokinetics, pharmacodynamics and therapeutics.
- K8. The fundamental osteopathic principles of body unity, the interrelatedness of structure and function, and the human body's self-healing and self-regulatory mechanisms that provide the foundation for osteopathic practice.
- K9. The basic science, mechanisms of action and physical findings of somatic dysfunction.
- K10. The mechanisms of action, indications and contraindications, and basic application of Osteopathic Manipulative Treatment (OMT).
- K11. Fundamental epidemiologic concepts, methods and statistical principles that underlie evidence-based medicine.
- K12. The impact of social inequalities in health care and the factors that are determinants of health outcomes.
- K13. The personal values, attitudes and biases that influence patient care.
- K14. The ethical principles that underlie the medical profession and professional behavior.
- K15. The structure and function of the health care system and how it affects the delivery of osteopathic patient care.

Skills: The MSUCOM student will be able to:

- S1. Identify, access, interpret and apply medical evidence contained in the scientific literature.
- S2. Elicit a comprehensive history from a patient and other sources as appropriate and perform a clinically appropriate physical examination that integrates osteopathic principles and practices.
- S3. Interpret relevant laboratory, imaging and other diagnostic studies in the context of osteopathic patient care.
- S4. Communicate effectively with patients, families, colleagues and other health professionals and caregivers in various clinical settings.
- S5. Generate, access, and test appropriate hypotheses during the medical interview and physical examination to develop and prioritize an appropriate list of potential diagnoses.
- S6. Recognize and incorporate into clinical data gathering and decision making the psychosocial and cultural factors that contribute to health, illness, and behavior.

- S7. Competently perform basic clinical procedures essential for a general osteopathic practice.
- S8. Apply osteopathic principles, including the application of OMT and principles of preventative medicine and health promotion, into an appropriate patient-centered, evidence-based and cost-effective patient care plan.
- S9. Relate effectively to and build rapport with patients of all ages, gender, culture, educational and economic backgrounds.
- S10. Work in cooperation with other health care professionals in the care of patients and in the provision of quality patient-centered care.
- S11. Use guidelines and other standards of patient care and patient safety appropriately in osteopathic medical practice.

Attitudes/Behaviors: The MSUCOM student will demonstrate:

- A1. Compassion and sensitivity in the care of patients and respect for their privacy, dignity and right to be fully involved in decisions about care.
- A2. A responsiveness to the needs of patients and society that supersedes self-interest.
- A3. Accountability to patients, society and the profession.
- A4. A commitment to excellence, continuous self-assessment and ongoing professional development.
- A5. Commitment to the need to apply ethical principles in the execution of all duties and in all research endeavors.
- A6. Dedication to one's own well-being, in addition to that of patients.
- A7. Honesty and integrity in all interactions.
- A8. A commitment to promote health and well-being of the communities they serve.

Required Preclerkship Courses

Semester 1

- **ANTR 510 – Clinical Human Gross Anatomy and Palpatory Skills** [8 CH]
Description: Introduction to macroscopic human structure, landmarks, and spatial relationships using laboratory prosections, multimedia, live human palpation models, and diagnostic imaging. Clinical correlations. Correct usage of clinical-anatomical language. Development of osteopathic motor skills for performing basic patient palpation.
- **BMB 516 – Metabolic Biochemistry: Nutrients and Products** [1 CH]
Note: This course will begin with the Class of 2022.
Description: Basic biochemical principles and terminology. Overview of metabolism of biomolecules of importance to medical biology and human pathophysiology.

Semester 2

- **OMM 511 – Osteopathic Manipulative Medicine 1** [1 CH]
Description: Basic palpatory skills and clinical knowledge leading to osteopathic diagnosis and treatment.
- **BMB 515 – Medical Biochemistry and Molecular Biology** [2 CH]
Note: This course will end with the last presentation for the Class of 2021.
Description: Basic biochemical principles and terminology. Overview of metabolism of biomolecules of importance to medical biology and human pathophysiology.
- **OST 551 – Osteopathic Patient Care 1** [1 CH]
Description: Clinical assessment skills and evidence-based medicine to develop effective critical thinking in the doctor patient relationship.
- **BMB 527 – Medical Genetics** [1 CH]
Description: Basic principles of human medical genetics. Storage and expression of genetic information. Transmission of genetic information to progeny.
- **BMB 528 – Molecular Biology and Medical Genetics** [2 CH]
Note: Starts with Class of 2022.
Description: Basic principles of molecular biology and human medical genetics; storage and expression of genetic information; transmission of genetic information to progeny.
- **MMG 531 – Medical Immunology** [2 CH]
Description: Basic principles of immunology. Overview of concepts and terminology in relation to human disease defenses.

- **MMG532 – Medical Microbiology** [2 CH]
Description: Basic principles of microbiology including bacteriology, virology, mycology, and parasitology and their relationship to disease in humans.
- **PHM 564 – Medical Pharmacology** [2 CH]
Description: Basic principles of pharmacology and toxicology and selected drugs.
- **PSL 539 – Cell Biology & Pathophysiology** [4 CH]
Description: Modern concepts of human cell biology as a basis for understanding integration of structure (histology) and function (physiology) in health and disease (pathology). Introduction to adaptive growth response, cell injury, inflammation, hemodynamic disorders, and tissue repair.

Semester 3

- **OMM 512 – Osteopathic Manipulative Medicine 2** [1 CH]
Description: Continuation of OMM 511. Basic palpatory skills and clinical knowledge leading to osteopathic diagnosis and treatment.
- **OST 552 – Osteopathic Patient Care 2** [2 CH]
Description: Clinical assessment skills and evidence-based medicine to develop effective critical thinking in the care of patients, as it relates to neurology, orthopedics, endocrine, female reproduction, male reproduction and genitourinary systems.
- **OST 567 – Young and Aging Adult 2** [1 CH]
Note: This course will end with the last presentation for the class of 2020.
Description: Focus on children birth to 18 and elderly over sixty-five years of age. Normal structure, function and pathologies focusing on the nervous, endocrine, reproductive and genitourinary systems.
- **OST 556 – Pediatrics 1** [1CH]
Note: New for class 2020
Description: Focus on children birth to 18. Normal structure, function and pathologies focusing on the nervous, endocrine and genitourinary systems.
- **OST 571 – Neuromusculoskeletal System** [10 CH]
Description: Systems Neuromusculoskeletal Medicine from basic science through clinical neurology, orthopedics, rheumatology, physiatry and ophthalmology. Neuroanatomy, orthopedic anatomy, integration with clinical neurology, orthopedics, physiatry and ophthalmology.

- **OST 572 – Genitourinary System** [3 CH]
Description: Normal urinary and male reproductive structure and function; principles of diagnosis and management of urinary and male reproductive disorders. Integration of basic science and clinical information related to the urinary and male reproductive systems.
- **OST 573 – Endocrinology System** [3 CH]
Description: Multidisciplinary approach to endocrinology. Normal endocrine structure and function; principles of diagnosis and management of endocrine disorders. Integration of basic science and clinical information.

Semester 4

- **OMM 513 – Osteopathic Manipulative Medicine 3** [1 CH]
Description: Continuation of OMM 512. Basic palpatory skills and clinical knowledge leading to osteopathic diagnosis and treatment.
- **OST 553 – Osteopathic Patient Care 3** [3 CH]
Description: Integration of components of the doctor patient relationship, clinical assessment skills and evidence based medicine to develop effective critical thinking and assessment skills in the care of patients. Correlations to concurrent integumentary and gastrointestinal systems courses. Preparation for future role as physician educator.
- **OST 557 – Pediatrics II** [1 CH]
Description: Focus on children birth to 18 years. Normal structure, function and pathologies focusing on the integumentary, gastrointestinal and female reproductive systems.
- **OST 568 – Young and Aging Adult 3** [1 CH]
Note: This course will end with the last presentation for the Class of 2020.
Description: Focus on children birth to 18 and elderly greater than 65. Normal structure, function and pathologies focusing on the integumentary and gastrointestinal systems.
- **OST 574 – Female Reproductive System** [3 CH]
Description: Normal structure and function of related pathologies with the female reproductive system. Integration of basic science and clinical information in obstetrics and gynecology.
- **OST 575 – Gastrointestinal System** [6 CH]
Description: Systems biology approach to the entire digestive track, including accessory organs of digestion. Normal structure and function and pathologies. Integration of basic science and clinical information.

- **OST 576 – Integumentary System** [2 CH]
Description: Systems biology approach to the integumentary system, to include the skin and its epidermal derivatives. Normal structure and function and pathologies. Integration of basic science and clinical information.
- **FCM 650 – Principles of Family Medicine (Preceptor)** [1 CH]
Description: One-week intensive preceptorship in family medicine.

Semester 5

- **OMM 514 – Osteopathic Manipulative Medicine 4** [1 CH]
Description: Advanced osteopathic palpatory skills and clinical knowledge leading to osteopathic diagnosis and treatment.
- **OST 554 – Osteopathic Patient Care 4** [3 CH]
Description: Integration of components of the doctor patient relationship, clinical assessment skills and evidence based medicine to develop effective critical thinking and assessment skills in the care of patients. Correlations to concurrent psychopathology, hematopoietic, and cardiovascular systems courses.
- **OST 569 – Young and Aging Adult 4** [1 CH]
Note: This course will end with the last presentation for the Class of 2020
Description: Focus on children birth to 18 and elderly greater than 65. Normal structure, function and pathologies focusing on behavioral, cardiovascular and hematopoietic systems.
- **OST 558 – Pediatrics III** [1 CH]
Description: Focus on children birth to 18 and elderly greater than 65. Normal structure, function and pathologies focusing on behavioral, cardiovascular and hematopoietic systems.
- **OST 577 – Psychopathology System** [2 CH]
Description: Systems biology approach to the behavioral system. Normal structure and function and pathologies of the mind to include integration of basic science and clinical information.
- **OST 578 – Hematopoietic System** [2 CH]
Description: Systems biology approach to the hematopoietic system including normal structure and function, hematopoiesis, clotting and hematopoietic pathologies. Integration of basic science and clinical information.
- **OST 579 – Cardiology System** [9 CH]
Description: Systems biology approach to the cardiovascular system, including the heart and vasculature throughout the body. Normal structure and function and pathologies. Integration of basic science and clinical information.

- **FCM 650 – Principles of Family Medicine (Preceptor)** [1 CH]
Description: One-week intensive preceptorship in family medicine.

Semester 6

- **OMM 515 – Osteopathic Manipulative Medicine 5** [1 CH]
Description: Continuation of OMM 514. Advanced osteopathic palpatory skills and clinical knowledge leading to osteopathic diagnosis and treatment.
- **OST 555 – Osteopathic Patient Care 5** [2 CH]
Description: Integration of components of the doctor patient relationship, clinical assessment skills and evidence based medicine in the care of patients. Correlation to concurrent respiratory system course. Presentation skills.
- **OST 570 – Young and Aging Adult 5** [1 CH]
Note: This course will end with the last presentation for the Class of 2020.
Description: Focus on children birth to 18 and elderly greater than 65. Normal structure, function and pathologies focusing on the respiratory system.
- **OST 580 – Respiratory System** [6 CH]
Description: Systems biology approach to the entire respiratory system, including the ear, nose, throat, sinuses, and related structures of the thorax. Includes certification in Basic and Advanced Cardiac Life Support.
- **OST 583 – Geriatrics** [1 CH]
Note: This course will end with the last presentation for the Class of 2021.
Description: Describe and identify normal aging process of persons 65 year of age and older. Integration of systems course content with clinical issues related to elderly pathology and disease prevention as related to the: neurology, endocrinology, female reproductive, genitourinary, integumentary, gastrointestinal, cardiovascular, psychopathology, hematopoietic, and respiratory systems. Identify aspects of physiologic aging and physiologic changes, with functional reserve, and the relationship between environment, function and mobility.
- **OST 581 – Ethics, Professionalism & Law** [2 CH]
Description: Introduction to the legal principles and ethical standards relevant to the practice of medicine including a variety of applicable legal theories such as negligence, liability and fraud. Topics of professional responsibility, confidentiality, consent, end-of-life issues, and reproductive rights are also included.
- **FCM 650 –Principles of Family Medicine (Preceptor)** [1 CH]
Description: One-week intensive preceptorship in family medicine.

Semester 7

- OST 582 – Transitions: Classroom to Bedside [1 CH]
Description: Selected topics in preparation for clinical education.

Pre-Clerkship Electives

- **ANTR 585 – Directed Study in Prosection** [1 to 5 CH]
Description: Provides students with hands-on prosection of selected regions of preserved Human Cadavers or isolated body parts. Students can accumulate a maximum of 15 credits in all enrollments.
- **ANTR 590 – Independent Study in Clinical Human Morphology** [1 to 5 CH]
Description: The specific topics for study can be based on gross anatomy, histology, radiological anatomy, cytology, neuroscience, or embryology, depending on the interest of the Faculty involved or the student.
- **FCM 590 – Medical Spanish** [1 CH]
Description: Provides students with Spanish language skills needed to provide basic H&Ps, follow-up care, and provide prescription instructions to Spanish-speaking patients. The goal of the course is to help future health care providers better communicate with Spanish-speaking patients and provide culturally sensitive health care services to this growing population.
- **FCM 590 – Osteopathic Leadership in Integrative Compassionate Care** [1 to 2 CH]
Description: The Osteopathic Leadership Academy for Integrative Compassionate Care electives are a sequence of presentations, projects and experiences for MSU COM students who are active members of the Leadership Academy for Integrative Compassionate Care with an interest in exploring creative and dynamic leadership, and providing compassionate care in medicine. Arts in Medicine (Spring), Doctor-Patient Relationships (Summer), Moral Ethics and Economics of Compassion (Fall), Self-Care (Spring)
- **FCM 590 – Spirituality in Medicine** [1 CH]
Description: Designed to emphasize that spirituality is a vital component of well-being for both physician and patient. The elective is administered in a round-table format that is designed to promote dialog amongst the students, instructor, and presenters when available. Various topics in spirituality relevant to all health care providers, with a special emphasis on the role of spirit in the osteopathic philosophy, will be covered. A non-biased, balanced, and safe forum will be provided for the presentation and discussion of ancient, traditional, modern, evidence and non-evidenced based perspectives.
- **HM 590 – Broadening Perspectives on Health Care in Costa Rica** [1 CH]
Description: Provides students with an introduction to health care in Costa Rica. It is intended to give first and second year CHM and COM students an introduction to a universal health care system where everyone is covered.

- **HM 590 – Health Care Interviewing of Spanish-Speaking Patients** [1 CH]
 Description: Students will acquire health-related Spanish language skills to interact with Spanish-speaking patients; develop skills needed to review in Spanish patients' medical histories, conditions and procedures; develop skills in explaining diagnostic procedures in Spanish; develop skills in defining medical terms/conditions/procedures in Spanish; acquire understanding of cultural issues necessary to retrieve accurate medical data in working with Spanish-speaking patients.
- **IM 618 – Clinical Tropical Medicine** [2 CH]
 Description: Provides an introduction to the practice of clinical medicine in resource-challenged settings. The focus of the course is on Africa, because of the clinical electives offered by MSU-COM for fourth year students, but much of the content will be relevant in other settings.
- **OMM 500 – Student OMM Clinic** [1 CH]
 Description: Provides students with additional instruction in OMM diagnosis and treatment of a variety of disorders and hand's on practice with patients.
- **OMM 590 – Sports OMT Elective** [1 CH]
 Description: Provides the student with an opportunity to actively treat MSU Division I athletes using OMT under the guidance of faculty residents. This course is a two-year commitment. First year students are trained to evaluate and treat the lumbar, sacrum, pelvis, and lower extremity regions using a standardized OMT protocol. Second year students spend time at Jenison Field House treating MSU Division I cross-country athletes using the standardized OMT protocol.
- **OMM 590 – Teaching Assistant** [1 CH]
 Description: Provides students with experience in teaching OMM diagnosis and treatment in a small group setting.
- **OST 590 – Autopsy Observation** [1 CH]
 Description: Provides students with opportunity to view an autopsy.
- **OST 590 – Community Medicine and Mayan Culture in the Yucatan -Merida, MX** [3 CH]
 Description: Provides students with an overall purpose as follows: Enriching students' understanding of Mayan civilization, culture, and healthcare delivery system in the Yucatan. In addition, students should develop an understanding of disease etiology and control of endemic diseases.
- **OST 590 – Guatemala Medical Service Elective** [1 CH]
 Description: Provides students with an overall purpose as follows: to enhance students' understanding host country's healthcare system as well as understanding and developing cultural competency. During the Elective students will provide healthcare services under the supervision of licensed US physicians to develop an understanding of the regional disease

etiology and control of endemic diseases, in particular, infectious/tropical diseases and those associated with the lack of potable water and sanitation.

- **OST 590 – (S)partners for Health Measurement Team [1 CH]**
Description: Provides students with knowledge and training for conducting reliable and valid pediatric CVD risk factor assessments, and health behaviors surveys, as part of an applied research project. After training, students participate on the measurement team with faculty, staff, other students, to perform baseline and post assessments in 5th grade children in public schools.
- **OST 590 – Transforming the Doctor-Patient Relationship: Telling the Story [1 CH]**
Description: Provides students with new concepts, strategies and techniques for more fully exploring their patient’s background and personal histories. It will include a series of hands-on and engaging theatrical exercises designed to stimulate creating thinking.
- **PHM 590 – Case Studies in Clinical Pharmacology [1 CH]**
Description: Provides students with the opportunity to review and expand their knowledge of pharmacology and to apply that knowledge to clinical therapeutic problems.
- **PSC 591 – Happiness and Emotional Resilience Promotion for Health Care Providers [1 CH]**
Description: Provides students with evidenced-based educational modules that were created to address the specific needs of medical students.
- **OST 590 – Dominican Republic, Healthcare Delivery System and Culture (Santo Domingo, Dominican Republic [3 CH]**
Description: Enriching students’ understanding of Dominican culture and healthcare delivery system in the Dominican Republic. In addition, students should develop an understanding of disease etiology and control of endemic diseases.
- **OST 590 – Korea Healthcare Delivery System and Culture (Seoul, South Korea) [4 CH]**
Description: To enrich students’ understanding of rich cultures of South Korea and understanding of their healthcare services and delivery system. In addition, students should develop an understanding of disease etiology and control of endemic diseases.
- **OST 590 – Peru Medical Service Elective [2 CH]**
Description: To enhance students’ understanding host country’s healthcare system and understanding and developing cultural competency; in addition students will provide healthcare services under the supervision of licensed US physicians, develop an understanding of the regional disease etiology and control of endemic diseases, in particular, infectious/tropical diseases and those associated with the lack of potable water and sanitation.
- **OST 590 – Cuba and the United States: A Comparative Analysis of Health Systems (Havana, Cuba) [3 CH]**

Description: To introduce students to the health care delivery model in Cuba while experiencing the country's rich culture. The students will explore the public health and community medicine model by on site observation of the delivery of community health clinics, maternal health, pediatric care, and geriatric care. The students will experience healthcare through the Cuban School of Public Health.

- **PMR 590 – Special Problems: Basics of Medical Acupuncture [1 CH]**

Description: Provides students with a basic understanding of the history, scientific evidence and practical uses of medical acupuncture, using a lecture & hands on laboratory format.

Core Clerkship Courses

Semesters 8-10

C3 Didactic Program Curriculum (1 per week - Concurrent to R2s)

- **OST 603– Core Clinical Concepts (C3) Syllabus** [9 CH]
Description: A 36-week didactic continuity experience. A 36-week didactic continuity experience delivered through online self-preparation and classroom instruction at each of the base hospitals. This didactic curriculum includes symptom-based topics that can relate to multiple specialties with a different focus each 4 weeks: General Tasks & Non-Specific Symptoms; Patient Safety, Quality Improvement and Leadership; Dyspnea, Wheezing, Cough, and Upper Respiratory Symptoms; Musculoskeletal Disorders; Genitourinary Issues; Chest Discomfort & Syncope; Alterations in Behavior; Abdominal Pain (Initial Presentation); and Health Maintenance and Life-Long Care.

R2 Core Curriculum (asynchronous)

- **FCM 620 – Family Medicine** [6 CH]
Description: Clinical exposure in the area of family medicine.
- **FCM 622 – Family Medicine Sub-Internship** [6 CH]
Description: Clinical exposure in osteopathic family medicine. Proficiency in advanced motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **IM 650 –Internal Medicine** [6 CH]
Description: Clinical exposure in osteopathic internal medicine in the hospital setting. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **IM 657 – Emergency Medicine** [6 CH]
Description: Acute evaluation and management of patients in the hospital emergency department and other locations.
- **IM 658 – Ambulatory Internal Medicine** [6 CH]
Description: Clinical exposure in osteopathic internal medicine in the out-patient setting. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.

- **IM 660 – Internal Medicine Sub-Internship [6 CH]**
 Description: Clinical exposure in osteopathic internal medicine. Proficiency in advanced motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **NOP 656 – Neurology [6 CH]**
 Description: Clinical exposure in neurology. Proficiency in motor skills, aptitudes; comprehension of concepts and principles; patient evaluation, diagnosis, management, and therapy.
- **OMM 602 – Osteopathic Principles [2 CH]**
 Description: Integration of osteopathic manipulative medicine and osteopathic principles and practice during clerkship rotations.
- **OSS 651 – Obstetrics /Gynecology [6 CH]**
 Description: Obstetric patient evaluation and management: motor skills, aptitudes, evaluation of the prenatal through postpartum patient and management of gynecologic problems.
- **OSS 653 – Surgery [6 CH]**
 Description: Motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, therapy.
- **OSS 654 – Anesthesiology [3 CH]**
 Description: Motor skills, concepts and principles, patient evaluation, management and therapy.
- **PED 600 – Pediatrics [6 CH]**
 Description: Practical clinical exposure in the area of pediatrics.
- **PSC 608 – Psychiatry [6 CH]**
 Description: Supervised practice with in-patient, out-patient, emergency, and community mental health services.
- **RAD 610 – Radiology [4 CH]**
 Description: Diagnostic imaging consultation. Participation in image interpretation and observation in hospital or out-patient radiology setting.

Elective/Selective Clerkship Courses

Semesters 10-12

Clerkship Electives

(Students must complete 36 weeks of electives. Of these, 12 weeks must be drawn from the Medicine list and 8 from the Surgery list. The remainder can be chosen from either list.)

Medicine Electives (12 Weeks Required)

- **ANTR 685 – Directed Study in Clinical Prosection** [3 OR 6 CH]
Description: Anatomical prosection and body-region specific pathologies.
- **FCM 621 – Family Medicine Specialty Rotation** [3 or 6 CH]
Description: Clinical exposure in osteopathic family medicine subspecialty rotations. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **HM 610 – Pathology Clerkship** [3 or 6 CH]
Description: Anatomic and clinical pathology with emphasis on clinical-pathological correlation. Conducted in pathology departments of affiliated hospitals.
- **IM 621 – Clinical Tropical Medicine - Malawi** [3 or 6 CH]
Description: Supervised clinical experiences in a large African teaching hospital and its outpatient clinics; students must spend at least six weeks on site. Small group discussions led by MSU faculty.
- **IM 651 – Cardiology** [3 or 6 CH]
Description: Intensive experience in bedside diagnosis and care of patients with the more frequently seen cardiac problems.
- **IM 652 - Gastroenterology** [3 or 6 CH]
Description: Inpatient and outpatient clinical gastroenterology. GI diseases. Patient evaluation and management. Behavioral science and patient care.
- **IM 653 – Oncology & Hematology** [3 or 6 CH]
Description: Diagnosis, staging, and treatment methods of solid tumors and other neoplasms. Pharmacology of cytotoxic agents. Issues in nutrition. Behavioral approaches to the terminally ill patient.
- **IM 654 – Pulmonary Disease** [3 or 6 CH]
Description: Evaluation and treatment of patients with common pulmonary diseases including acute and chronic respiratory failure, primary and metastatic lung tumors, various bacterial and non-bacterial pneumonias.

- **IM 655 –Nephrology** [3 or 6 CH]
 Description: Clinic and hospital based experience to develop basic skills in evaluation and management of patients with renal disease. Integration of renal physiology and pathophysiology.
- **IM 659 – Medical Critical Care** [3 or 6 CH]
 Description: Clinical exposure in osteopathic medical critical care (distinct from surgical critical care). Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **IM 661 – Internal Medicine Specialty** [3 or 6 CH]
 Description: Clinical exposure in osteopathic internal medicine subspecialty rotations. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **IM 662 – Urgent Care** [3 or 6 CH]
 Description: Acute evaluation and management of patients in the outpatient urgent care setting.
- **IM 663 – Emergency Medicine/Wilderness** [3 or 6 CH]
 Description: Acute evaluation and management of patients in the austere environment – wilderness or other location, including disaster medicine, and emergency medicine system.xxx.
- **IM 664 – Pediatric Emergency Medicine** [3 or 6 CH]
 Description: Acute evaluation and management of patients in the hospital based pediatric emergency department.
- **IM 665 – Emergency Medicine Advanced** [3 or 6 CH]
 Description: Advanced acute evaluation and management of patients in the hospital emergency department and other locations.
- **IM 666 – Emergency Medicine Toxicology** [3 or 6 CH]
 Description: Evaluation and management of patients who suffer from an exposure to any form of toxins, the typical clinical presentation, evaluation and management including antidotes.
- **IM 667 – EM Hyperbaric and Wound Management** [3 or 6 CH]
 Description: Management of wounds from all causes, including the use of a hyperbaric chamber as a treatment strategy.
- **IM 668 – EM EMS & Disaster Management** [3 or 6 CH]
 Description: Emergency Medical Services and Disaster Management designed to expose the student to multiple facets of emergency care in the community and outside the emergency department, including community disaster preparedness.
- **IM 669 – Emergency Medicine Ultrasound** [3 or 6 CH]
 Description: Bedside ultrasound, integrating curriculum related to the physics and orientation of ultrasound images to obtaining images at the bedside to begin a portfolio.

- **NOP 657 – Neurology Specialty** [3 or 6 CH]
 Description: Clinical exposure in specialties of Neurology. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **OMM 601 – Osteopathic Manipulative Medicine** [3 or 6 CH]
 Description: Advanced training in the diagnosis of musculoskeletal dysfunction and application of osteopathic manipulative techniques.
- **OST 615 – Biomedical Research** [6 CH]
 Description: Mentored exposure to either basic or clinical research and development of skills to perform clinical or basic science research. Research topic is arranged with the research director or clinician researcher.
- **OST 685 – International Clerkship** [3 or 6 CH]
 Description: Faculty supervised international clerkship opportunities to immerse students into global healthcare institutions and communities with various healthcare delivery systems that will include student introduction to common diseases and treatment, and cultural sensitivity outside of the required clerkship experience in our affiliated hospital system.
- **OST 686 – International Clerkship: Merida, Mexico** [3 or 6 CH]
 Description: Clerkship experiences in Mexican healthcare institutions and healthcare delivery systems. Includes introduction to common diseases and treatments, as well as cultural aspects of Mexican health care.
- **OST 687 – Peru Medical Service** [3 or 6 CH]
 Description: Healthcare services under the supervision of licensed U.S. physicians working in tandem with local providers. Offered second half of semester.
- **OST 688 – International Clerkship: Cuba** [3 or 6 CH]
 Description: On site observation of healthcare delivery in community health clinics, maternal health, pediatric care, and geriatric care. In patient care in teaching hospitals in Havana, Cuba. Offered second half of semester.
- **PED 601 – Pediatric Specialty** [3 or 6 CH]
 Description: Clinical exposure in specialties of Pediatrics. Proficiency in motor skills and aptitudes; comprehension of concepts and principles; patient evaluation; diagnosis; management; therapy.
- **PMR 601 – Physical Medicine and Rehabilitation** 3 or 6 CH]
 Description: Physical medicine and rehabilitation inpatient and ambulatory setting clinical experience, didactic sessions, case documentation and presentation, hospital rounds. Strong emphasis on evaluation of neuromusculoskeletal disorders and treatment of function deficits.
- **PSC 609 – Adult Psychiatry** [3 or 6 CH]
 Description: Experience in psychiatry in clinical settings with adults.
- **PSC 610 – Child Psychiatry** [3 or 6 CH]
 Description: Experience in psychiatry in clinical settings with child patients and their families.

- **RAD 609 – Radiology** [4 or 8 CH]
Description: Diagnostic imaging consultation. Participation in image interpretation and observation in hospital or out-patient radiology setting.

Surgery Electives (8 Weeks Required)

- **NOP 620 – Ophthalmology** [3 or 6 CH]
Description: Study in general or specialty neurology and ophthalmology.
- **OSS 640 – Cardio Thoracic/Vascular Surgical** [3 or 6 CH]
Description: Cardio thoracic/vascular surgery management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 641 – Facial/Plastic Reconstruction** [3 or 6 CH]
Description: Facial and plastic reconstruction management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 642 – Neurosurgery** [3 or 6 CH]
Description: Neurosurgery management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 643 – Podiatry** [3 or 6 CH]
Description: Podiatry management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 644 – Sports Medicine** [3 or 6 CH]
Description: Sports Medicine management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 645 – Urology** [3 or 6 CH]
Description: Natural history, pathophysiology, presentation, investigation and treatment management of patients.
- **OSS 646 – Maternal Fetal Medicine** [3 or 6 CH]
Description: Maternal and Fetal Medicine management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.

- **OSS 647 – Reproductive Endocrine** [3 or 6 CH]
Description: Reproductive Endocrine management and treatment. Proficiency in motor skills, aptitude, comprehension of concepts and principles, patient evaluations, diagnosis, management, therapy.
- **OSS 648 – Anesthesiology Advanced Specialty** [3 or 6 CH]
Description: Advanced motor skills, concepts and principles, patient evaluation, management and therapy.
- **OSS 652 – OB-GYN Specialty** [3 or 6 CH]
Description: Obstetric patient evaluation and management: motor skills, aptitudes, evaluation of the prenatal through postpartum patient and management of gynecologic problems.
- **OSS 655 – Pain Management Specialty** [3 or 6 CH]
Description: Clinical experiences, didactic sessions and reading assignments for chronic pain management.
- **OSS 656 – Orthopedic Clerkship** [3 or 6 CH]
Description: Program developed to achieve proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.
- **OSS 658 – Otorhinolaryngology** [3 or 6 CH]
Description: Develop proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, and therapy.
- **OSS 663 – General Surgery** [3 or 6 CH]
Description: Surgical diagnosis, management, and treatment. Proficiency in motor skills, aptitudes, comprehension of concepts and principles, patient evaluation, diagnosis, management, therapy.

Additional Degree Programs

MSUCOM offers a variety of additional graduate educational opportunities.

D.O./Ph.D. Program

Since it began in 1979, the DO-PhD Physician Scientist Training Program has offered education and training to prepare individuals for careers in biomedical research and academic medicine, enabling them to become physician scientists. Students in the DO-PhD program spend at least seven to eight years in education and training to become medical scientists. Graduates find careers in biomedical research or academic medicine. Their training enables them to be physician scientists working on basic science or disease-related problems. Additional information is available by clicking on this link: [MSU DO-PhD Program](#) .

D.O./M.P.H. Program

The Michigan State University College of Osteopathic Medicine has a joint DO/MPH degree program in conjunction with the Michigan State University Program in Public Health. To participate in the program, students must be independently accepted into the osteopathic program and to the public health program at Michigan State University. Additional information is available by clicking on this link: [MSU Masters of Public Health Program](#) .

D.O./M.B.A. Program

The College of Osteopathic Medicine collaborates with the Eli Broad College of Business to offer a Doctor of Osteopathic Medicine and Master of Business Administration joint-degree program jointly administered by both colleges. A student pursuing a full-time M.B.A. degree jointly with a Doctor of Osteopathic Medicine (D.O.) degree can transfer a maximum of 12 credits to the M.B.A program. For information about the Doctor of Osteopathic Medicine and Master of Business Administration dual-degree program, contact the Associate Dean in either college.

Graduate Study Opportunities

Individuals seeking graduate level research and education can find opportunities in the biomedical departments within MSUCOM. Additional information about these programs is available by clicking on this link: [MSU Registrar List of Biomedical Graduate Programs](#) .

For additional information on MSUCOM programs, please visit the website: www.com.msu.edu



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