

OSS 640
Cardio Thoracic/Vascular
Surgery

CLERKSHIP ELECTIVE ROTATION SYLLABUS

OSTEOPATHIC SURGICAL SPECIALITIES
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At Michigan State University College of Osteopathic Medicine (MSUCOM), we are constantly working to improve our curriculum and to meet accreditation guidelines. We need to meet the challenges of modern medicine that force us to innovate. While changes will generally be instituted at the beginning of the school year, changes may also be implemented semester to semester.

Please be mindful of the need to read your syllabi before beginning your rotation.

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INTRODUCTION AND OVERVIEW

This course is designed to provide the student with an opportunity to actively engage in patient-based learning experiences under the guidance of a faculty member in collaboration, as appropriate, with residents and/or fellows. The purpose of this Cardio and Thoracic Surgery clerkship is to provide the student with an overview of the clinical specialty.

Rotations are typically two weeks, 3 credit hours or four weeks, 6 credit hours in duration. Timeframes for each rotation are decided at least 30-days prior to the beginning of the rotation.

The overall performance of course participants will be evaluated through customary assessment instruments normally employed by the department for core rotations, at the discretion of the instructor of record.

Please note that we have included links to the reading materials. Should the links not work for you, please cut, and paste the link into a browser window and the material should load for you.

This syllabus provides an overview of rotation goals and objectives designed to help you gain an understanding of the breadth and scope of this subject. As you progress through the rotation, you will perform certain activities intended to help you meet the identified goals and objectives. Please make sure to review this syllabus in its entirety to ensure understanding of the rotation format, syllabus content, and MSUCOM expectations.

ELECTIVE COURSE SCHEDULING

Preapproval

- This course does not require preapproval from the IOR. The student should follow the below directions for elective course confirmation and enrollment.

Required Prerequisites

- This course does not require any prerequisite courses.

Course Confirmation and Enrollment

- The student must be an active student at MSUCOM.
- Student must complete five core rotations prior to any elective rotation.
- It is the student's responsibility to provide the elective site/rotation acceptance material to the COM.Clerkship@msu.edu for MSU confirmation and scheduling.
 - MSUCOM clerkship confirmation is complete when the rotation is visible on the students Medtrics schedule.
- It is the student's responsibility to ensure enrollment prior to beginning any course/rotation.
 - Enrollment will be processed by the MSUCOM Registrar's Office upon clerkship confirmation.
 - Enrollment can be verified by the student by reviewing the Student Information System
- MSUCOM confirmation must occur at least 30 days in advance of the rotation.
- Once confirmed, the rotation may only be cancelled 30 days or more in advance of the start date.

ROTATION FORMAT

This course is designed to provide the student with an opportunity to actively engage in patient-based learning experiences under the guidance of a faculty member in collaboration, as appropriate, with residents and/or fellows. This Elective rotation is a two (2) or four (4) week experience. The purpose of this Cardio Thoracic / Vascular clerkship is to provide the student with an overview of the clinical specialty. Cardio Thoracic / Vascular surgery should include exposure to a variety of surgical topics and experiences. Exposure to the topics will be through reading, lectures, seminars, and hands-on experiences.

The service should be organized to provide the maximum degree of practical clinical exposure and learning in the areas of diagnosis, management, and therapy in cardio thoracic/vascular surgery, which is consistent with a fourth-year osteopathic medical student's level of knowledge. Opportunities for learning such as lectures, reading, consults and history and physical examination (H&P) review will be available.

Please note that we have included links to the reading materials. Should the links not work for you, please cut, and paste the link into a browser window and the material should load for you.

GOALS AND OBJECTIVES

GOALS

1. Observe and participate in the evaluation, intra-operative, pre - operative and post - operative management of patients requiring surgery.
2. Demonstrate the ability to appropriately evaluate post-operative care management of patients.
3. Demonstrate the ability to perform and record an osteopathic structural examination on a surgical patient and document such using acceptable osteopathic terminology.
4. Interact with patients and their families in a respectful, sensitive, and ethical manner.
5. Interact with members of the team, patient care units and ambulatory clinic personnel in a respectful, responsible, and professional manner.

OBJECTIVES

THE CARDIO THORACIC / VASCULAR SURGERY CLERKSHIP LEARNING OBJECTIVES ENCOMPASS THREE MAIN AREAS.

1. Knowledge (cognitive)
2. Skills (psychomotor)
3. Problem Solving & Professional Development

By the end of the cardio thoracic/vascular surgery clerkship, the student is expected to have achieved an understanding of the following objectives through reading, discussion, and hands-on experience.

By the end of the clerkship, given a patient scenario in a hospital/clinical setting, students should be able to do the following with accuracy:

1. Describe basic cardiovascular and thoracic physiology.
2. Describe Anatomy and physiology of the chest wall, diaphragm, heart, lungs, and other thoracic structures.
3. Describe the basics of thoracic imaging, including CT scans of the chest and vasculature as well as the interpretation of chest x-rays.

4. Demonstrate knowledge of invasive and non-invasive cardiothoracic tests and application of these tests to patient management.
5. List the indications for various pre-operative studies of the chest and become familiar with their interpretation (Chest x-rays, angiography, echocardiograms, EKG's, PFT's).
6. Demonstrate understanding of pathogenesis, pathophysiology, treatment, and outcome of the disease processes most frequently encountered in cardiothoracic practice (coronary artery disease, valve disease, heart failure and lung cancer).
7. Describe fundamentals of hemodynamics including:
 - a. Determinants of cardiac output
 - b. Determinants of oxygen delivery
 - c. Normal cardiac chamber pressures and saturations
8. Describe various operative approaches to the chest and the history of cardiothoracic surgery.
9. Demonstrate an understanding of basic theory and physiology of cardiopulmonary bypass, intra-aortic balloon pumps, ventricular assist devices and ECMO.
10. Discuss principles of post-operative cardiothoracic surgery patient care including:
 - a. Pharmacological support of the recovering myocardium and maintaining stable hemodynamics
 - b. Interpretation of invasive and noninvasive cardiac monitoring (i.e., right, and left atrial pressures, mixed venous saturations, ECG, oxygen saturations, urine output, arterial wave forms, and arterial blood gas interpretation)
 - c. Fundamentals of post-operative hemostasis
 - d. Fundamentals of cardiac pacing
 - e. Fundamentals of mechanical ventilation including weaning parameters
11. Describe the staging and classification of lung and esophageal cancer.
12. Discuss the multidisciplinary approach to treating thoracic malignancies.
13. Discuss the co-morbid conditions in patients undergoing cardiothoracic operations and how to appropriately stratify their operative risk.

COLLEGE PROGRAM OBJECTIVES

In addition to the above course-specific goals and learning objectives, this clerkship rotation also facilitates student progress in attaining the College Program Objectives. Please refer to the complete list provided on the MSUCOM website (<https://com.msu.edu/>) and in the Student Handbook.

REFERENCES

REQUIRED STUDY RESOURCES

Desire 2 Learn (D2L): Please find online content for this course in D2L (<https://d2l.msu.edu/>). Once logged in with your MSU Net ID, your course will appear on the D2L landing page. If you do not see your course on the landing page, search for the course with the following criteria, and pin it to your homepage: **OSS 640 Cardio Thoracic/Vascular Surgery**.

If you encounter any issues accessing this D2L course, please email the CA (on the title page of this syllabus). It is your responsibility to make sure you have access to the course D2L page on the first day of the course.

SUGGESTED STUDY RESOURCES

Sabiston, Textbook of Surgery: 21st ed
<http://ezproxy.msu.edu/login?url=https://www.clinicalkey.com/dura/browse/bookChapter/3-s2.0-C20170043124>

Peter F. Lawrence, Essentials of Surgical Specialties, 3e
<https://clerkship-lwwhealthlibrary-com.proxy2.cl.msu.edu/book.aspx?bookid=1332>

You can find additional resources at: <http://libguides.lib.msu.edu/medicalebooks>

ROTATION REQUIREMENTS

REQUIREMENT	SUBMISSION METHOD	DUE DATE Please refer to D2L for actual (month/day) due dates
Student Activity Log	Submit via the Dropbox in D2L	By 11:59pm the last day of the rotation
Mid Rotation Form *NOT required for Two Week Rotations.	Completed 100% and needing no revisions to the appropriate drop box in D2L	Due by 11:59pm by the 3 rd Sunday of the rotation
Attending Evaluation of Clerkship Student	Students must select their attending physician as directed within the rotation description in Medtrics. At the start of the last week of the rotation, students will need to request an evaluation in Medtrics. By requesting an attending evaluation from their assigned attending physician, the attending physician will receive an automated email link connecting them to their assigned Attending Evaluation within Medtrics. Attendings will be able to electronically access and submit the forms on behalf of their students.	Last Day of Rotation
Student Evaluation of Clerkship Rotation	Students will submit their rotation evaluations electronically at the conclusion of every rotation by accessing the Medtrics system: https://msucom.medtricslab.com/users/login/ . By the last week of each rotation, students will receive an automated email link connecting them to their assigned evaluation. Students can also access pending evaluations on the 'Home' or 'Evaluations' tabs within their Medtrics accounts.	Last Day of Rotation

ASSIGNMENTS

MID ROTATION FEEDBACK FORM

Students are required to complete the MSUCOM Mid-Rotation Feedback form.

This is not required for a two-week rotation.

Four-week Rotation: This will need to be completed by the Attending or Resident at the end of week two of the rotation. It should be dated no later than the 3rd Wednesday of the rotation. Students must upload the form to a D2L drop box by 11:59pm on third Sunday of the clerkship to be eligible to obtain a Pass in the rotation. A grade cannot be entered for the course until all requirements of the course have been met.

STUDENT ACTIVITY LOG

Students are required to submit via D2L Dropbox an Activity Log by 11:59 pm on the last day of the rotation.

In this log you will need to outline all the Procedures you either assisted or watched, the Primary Diagnosis of each patient seen, all meetings or lectures (including didactics) and all materials you read while on the rotation.

The complete Activity Log can be viewed on the last page of this syllabus or under the Activity Log Module on D2L for this course. The form is the last page of the syllabus.

ROTATION EVALUATIONS

Attending Evaluation of Student

Attending Evaluation of the Student is completed electronically via Medtrics by the supervisor designated within the Medtrics rotation description. To initiate this evaluation, each student must select their attending physician as directed within the rotation description in Medtrics. Students will receive an email from Medtrics to select the attending 7 days prior to the end of the rotation. Should your rotation lack a rotation description or if you have any questions, please contact COM.Clerkship@msu.edu. Upon selecting the attending physician directed within the Medtrics rotation description, the attending physician will receive an automated email link connecting them to their assigned Attending Evaluation within Medtrics.

Attendings will be able to electronically access and submit the Attending Evaluation of the Student. Attendings will access the electronic form within Medtrics by selecting the email link on a smart device. No login (username/password) will be required for attendings to access their pending evaluation(s) assigned to them. After the electronic form has been submitted by their attending, students can review the Attending Evaluation of the Student that were completed by visiting the 'Evaluations' module (in the 'About Me' tab) of their Medtrics profiles.

Students are encouraged to seek formative/verbal feedback on their performance at least weekly. Students are also encouraged to discuss the Attending Evaluation of the Student with the supervisor completing the evaluation.

Any evidence of tampering or modification while in the possession of the student will be considered “unprofessional behavior” and will be referred to the Committee on Student Evaluation (COSE).

Grades are held until all rotation requirements are received. Students are required to ensure their rotation requirements are completed correctly.

Student Evaluation of Clerkship Rotation

Students will submit their rotation evaluations electronically at the conclusion of every rotation by accessing the Medtrics system: <https://msucom.medtricslab.com/users/login/>. By the last week of each rotation, students will receive an automated email link connecting them to their assigned evaluation for the respective rotation. Students can also access their pending evaluations on the ‘Home’ or ‘Evaluations’ tabs within their Medtrics accounts.

Unsatisfactory Clinical Performance

The Instructor of Record will review/investigate a student’s performance on a rotation when a concern is raised by the supervisor(s), and/or when the Attending Evaluation of Clerkship Student contains any below expectation marks within the professionalism area, any unsatisfactory written comments, or a total of two or more below average marks on the evaluation. After investigations, the Instructor of Record will determine a final grade for the student.

Professionalism concerns, as well as accolades, will also be referred to the MSUCOM Spartan Committee Clearinghouse for resolution, per MSUCOM’s Common Ground Framework for Professional Conduct.

CORRECTIVE ACTION

There is no corrective action available for this course.

As determined by the IOR, the student will receive an N grade for the course if all assignments are **not completed** successfully within 14 days after the last day of rotation at 11:59pm (except for the Attending Evaluation). Additionally, a letter of unprofessional behavior for late submission of assignments will be sent to the MSUCOM Spartan Community Clearinghouse.

BASE HOSPITAL REQUIREMENTS

Students are responsible for completing all additional requirements set by the hospital/clinical site at which they are completing a rotation. Students are not responsible for reporting to MSUCOM the results of any requirements that exist outside of those listed above.

STUDENT RESPONSIBILITIES AND EXPECTATIONS

STATEMENT OF PROFESSIONALISM

Principles of professionalism are not rules that specify behaviors, but guidelines that provide direction in identifying appropriate conduct. These principles include the safety and welfare of patients, competence in knowledge and skills, responsibility for consequences of actions, professional communication, confidentiality, and lifelong learning for maintenance of professional skills and judgments.

Professionalism and professional ethics are terms that signify certain scholastic, interpersonal and behavioral expectations. Among the characteristics included in this context are the knowledge, competence, demeanor, attitude, appearance, mannerisms, integrity, and morals displayed by the student to faculty, peers, patients, and colleagues in other health care professions. Students are expected to always conduct themselves in a professional manner and to exhibit characteristics of a professional student.

STUDENTS RIGHTS AND RESPONSIBILITIES

Each individual student is responsible for their behavior and is expected to maintain standards of academic honesty. Students share the responsibility with faculty for creating an environment that supports academic honesty and principles of professionalism. Proper relationships between faculty and students are fundamental to the college's function and this should be built on mutual respect and understanding together with shared dedication to the education process. It is a fundamental belief that each student is worthy of trust and that each student has the right to live in an academic environment that is free of injustice caused by dishonesty. While students have an obligation to assist their fellow students in meeting the common goals of their education, students have an equal obligation to maintain the highest standards of personal integrity.

MSU COLLEGE OF OSTEOPATHIC MEDICINE STANDARD POLICIES

The following are standard MSUCOM policies across all Clerkship rotations.

CLERKSHIP ATTENDANCE POLICY

MSUCOM requires student participation in clerkship rotations and clinical activities with consistent attendance to acquire the skills and knowledge necessary for successful program completion. This policy will define the policy and procedures regarding absences for clerkship activities. [Clerkship-Absence-Policy.pdf \(msu.edu\)](#)

POLICY FOR MEDICAL STUDENT SUPERVISION

The MSUCOM curriculum includes required clinical experiences in a variety of clinical learning environments. The Medical Student Supervision Policy outlines all supervision agreements and expectations. [Clerkship Medical Student Supervision Policy.pdf](#)

MSUCOM STUDENT HANDBOOK

The Student Handbook is published electronically by MSUCOM for students in the Doctor of Osteopathic Medicine program. This handbook does not supersede other Michigan

State University or College of Osteopathic Medicine policies, regulations, agreements, or guidelines. <https://osteopathicmedicine.msu.edu/current-students/student-handbook>.

COMMON GROUND FRAMEWORK FOR PROFESSIONAL CONDUCT

The Common Ground Framework provides the MSUCOM community with a reminder of the unity of mind, body, and spirit that underlines the field of osteopathic medicine. The framework is a set of guiding, foundational principles that underpin professional conduct and integrity and applies to all professionals at work within the shared college community, independent of their specific roles or responsibilities.

<https://osteopathicmedicine.msu.edu/about-us/common-ground-professionalism-initiative>

MEDICAL STUDENT RIGHTS AND RESPONSIBILITIES

The rights and responsibilities of students enrolled in MSUCOM are defined by the medical colleges of Michigan State University, including the College of Osteopathic Medicine, the College of Human Medicine, and the College of Veterinary Medicine. Students enrolled in the professional curricula of these colleges are identified as “medical students.” These colleges collectively define “Medical Student Rights and Responsibilities” (MSRR). This document addresses academic rights and responsibilities, governance, procedures for complaints, due process, and other topics. The current version is available on the MSU Spartan Life website at the address below: <http://splife.studentlife.msu.edu/medical-student-rights-and-responsibilities-mssr>

MSU EMAIL

MSU email is the official communication from faculty and staff to students and students are responsible for checking it daily and maintaining their MSU email accounts so that messages can be received.

Forwarding MSU email to another email account or failure to check email are not valid excuses for missing a deadline or other requirements of the DO program.

Further, students must use secure email when working in a hospital, clinic, or other health care setting if discussion of patient information is involved. MSUNet (msu.edu) email is secure; many web-based email systems including Hotmail, Gmail, and Yahoo are not.

<https://osteopathicmedicine.msu.edu/current-students/student-handbook>.

DUTY HOURS AND FATIGUE MITIGATION

The accreditation standards for graduate medical education programs include restrictions on the duty hours of residents. Additionally, institutions are expected to promote a clinical learning environment in which duty hours are monitored and strategies exist to mitigate the effects of fatigue. [Clerkship Duty Hours and Fatigue Mitigation Policy.pdf](#)

STUDENT EXPOSURE PROCEDURE

A protocol has been developed by the University Physician to report incidents of exposure, e.g., needle sticks, mucous membrane exposure, tuberculosis exposure, etc., and it may be found here:

<https://osteopathicmedicine.msu.edu/current-students/clerkship-medical-education/injury-and-property-damage-reports>

Contact Associate Dean for Clerkship Education, Dr. Susan Enright (enright4@msu.edu), if exposure incident occurs.

COURSE GRADES

P/Pass – means that credit is granted, and that the student achieved a level of performance judged to be satisfactory by the department according to the student's didactic and clinical performance.

NGR/No Grade Reported – means that a final grade ('Pass' or 'No Grade') cannot be determined due to one or more missing course requirements. The NGR grade will be changed to a final grade once all the completed course requirements have been submitted to and processed by MSUCOM (either to the department or Clerkship Team). An 'NGR' grade will NOT remain on a student's transcript.

N/No Grade – means that no credit is granted, and that the student did not achieve a level of performance judged to be satisfactory by the department according to the student's didactic and clinical performance.

N Grade Policy

Students who fail this rotation will have to repeat the entire rotation and fulfill all (clinical and academic) requirements.

STUDENT ACCOMMODATION LETTERS

Michigan State University is committed to providing equal opportunity for participation in all programs, services, and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities (RCPD) at 517-884-RCPD, or on the web at www.rcpd.msu.edu. Once a student's eligibility for (clinical and/or testing) accommodation(s) are determined, the student may be issued an Accommodation Letter. Students must present their letter to the Clerkship Team (COM.Clerkship@msu.edu) at the start of the semester in which they intend to use their accommodations (for tests, projects, labs, etc.). Accommodation requests received after the semester onset will be honored whenever possible.

If modifications, updates, or extensions to an existing letter are made after the semester begins, it is the responsibility of the student to submit the newest version to the Clerkship Team if he/she intends to utilize the accommodation going forward.

SUMMARY OF GRADING REQUIREMENTS

Requirement	Submission Method	Pass	No Grade Reported	No Pass
Attending Evaluation of Clerkship Student	Attendings receive an automated email link connecting them to their assigned evaluation(s) within Medtrics, where they may access and submit the electronic form(s) directly	<ul style="list-style-type: none"> • Student may receive "Below Expectations" in up to one (1) subcategory. • Overall categories must receive "Meets Expectations" or "Exceeds Expectations" 	Will be the conditional grade until all requirements of this rotation are met	<ul style="list-style-type: none"> • Receives two (2) or more "Below Expectations" within the subcategory sections. • Receives comments that indicate below expectations of performance. • See Unsatisfactory Clinical Performance above
Student Evaluation of Clerkship Rotation	Can be accessed and submitted electronically by students within the dashboard of their Medtrics profiles	Completed 100% by 11:59 pm the last day of the rotation	Will be the conditional grade until all requirements of this rotation are met.	Failure to complete and submit within 14 days from the end of the rotation
Student Activity Log	Submit by the Dropbox in D2L	Completed 100% and uploaded by 11:59 pm the last day of the rotation	Will be the conditional grade until all requirements of this rotation are met	Failure to complete and upload within 14 days after the rotation ends
Mid Rotation Feedback Form	Submit via D2L	<ul style="list-style-type: none"> • Completed, scanned, and uploaded to D2L. • Must be 100% and needing no revisions by 11:59 pm on the 3rd Sunday of the rotation. 	Will be the conditional grade until all requirements of this rotation are met.	Failure to complete 100% and upload by 14 days after the last day of the rotation at 11:59 pm

Please list all meetings and Lectures attended:

Meeting / Lecture	Date	Topic

Please list all reading materials read on the rotation:

Material	Topic

When completed, please upload to the Dropbox on D2L.