

RAD 610

Advanced Radiology

CLERKSHIP ELECTIVE ROTATION SYLLABUS

DEPARTMENT OF RADIOLOGY
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At Michigan State University College of Osteopathic Medicine (MSUCOM), we are constantly working to improve our curriculum and to meet new AOA 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 rotations.

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INTRODUCTION AND OVERVIEW

Welcome to the radiology clerkship. During this two-week clerkship, it is anticipated you will have the opportunity to build on your current knowledge of diagnostic imaging to better equip you both for the remainder of your clinical experiences, as well as in your postgraduate training.

This curriculum is extremely flexible, consisting of 17 on-line education modules available from the D2L site.

Please familiarize yourself with the content of the syllabus, as it will be your guide to managing this course.

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 requires the following prerequisite course(s):
 - RAD 609

Course Confirmation and Enrollment

- The student must be an active student at MSUCOM.
- Student must complete five core rotations prior to any elective rotation.
- The student must receive MSUCOM confirmation and enrollment prior to beginning any elective rotation.
 - Once the student receives rotation acceptance from the host site, students must provide the elective application and host site approval to COM.Clerkship@msu.edu for MSUCOM confirmation and scheduling.
 - MSUCOM confirmation and enrollment is complete when the rotation is visible on the student's schedule.
 - 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 (preceptor) in collaboration, as appropriate, with residents and/or fellows.

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.

GOALS AND OBJECTIVES

GOALS

Our overall goal of this rotation is to provide our students with a basic level of understanding of the principles and applications of diagnostic imaging. We offer direct exposure to the individuals obtaining (i.e., technologists) and interpreting (i.e., Radiologists) the diagnostic examinations.

OBJECTIVES

- Reinforce the student's understanding of x- ray, ultrasound, CT, MRI, Nuclear Medicine, and PET imaging obtained during the first 2 years of the MSU-COM curriculum.
- Gain additional insight into how diagnostic imaging fits into the multidisciplinary approach to patient care and understand the importance of communication, professionalism, and teamwork between clinicians and radiologists relating to patient management while developing a better understanding of the synergies possible between clinicians and radiologists in the consultative care of patients.
- Encourage correlation of diagnostic images with previously learned normal and pathologic anatomy and pathophysiology to increase the student's understanding and recognition of common processes and pathology available from diagnostic images.
- Understand the basic requirements and restrictions necessary to obtain quality imaging by the various modalities and the impact on that quality by variation in patient condition, size, and mental status while introducing the students to the indications, contra-indications, patient preparation, post-procedure care, and relative radiation exposure and risks for various diagnostic imaging exams.
- Increase the student's knowledge of the various diagnostic imaging modalities offered by a modern radiology department and achieve a better understanding of how to select and sequence the appropriate imaging examinations for specific clinical presentations while considering the relative costs of different diagnostic imaging exams to be better able to plan and sequence patient exams that optimizes outcome and cost-effective patient care.
- Offer the student the opportunity to observe diagnostic imaging exams, instill sensitivity towards the patient's needs and apprehension about particular procedures and discuss the results and interpretation with the radiologist.
- Increase the students understanding of image digitization, how variables in digitization influence resolution and the computer's impact on diagnostic imaging (PACS).

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

Desire 2 Learn (D2L): Please find online content for this course in D2L (<https://d2l.msu.edu/>). Once logged in, your specific course section may appear on the D2L landing page. Or you may find and pin the course to your homepage by typing the following text into *Search for a course*: **Advanced Radiology**.

If you encounter any issues accessing this D2L course, please email the CA (on the title page of this syllabus).

SUGGESTED STUDY RESOURCES

Selected texts can be of value during the clerkship and to assist in the understanding of the materials included in the on-line learning modules. Suggested readings will be provided via D2L but are not essential for the successful completion of the clerkship.

1. Felson's Principles of Chest Roentgenology, A Programmed Text, Third Ed. by Lawrence R. Goodman
2. Essential Radiology, Second Edition by Richard B. Gunderman
3. Clinical Radiology, The Essentials, Third Edition by Richard H. Daffner
4. Chest, Abdomen, Bone and Clinical Skills, A Problem-Based Text, Third Edition by Amorosa, Novelline, and Squire
5. Squires: Fundamentals of Radiology (Sixth Edition), Harvard University Press, 2004 Novelline, R.

Textbooks, current radiology periodicals, and digital teaching series may be available in the onsite Radiology library and may vary somewhat by site.

Full service, extended hour, libraries are present at Michigan State University with onsite medical librarians, web-based searchable medical databases, and standard medical journals in both print and electronic formats. In addition, all MSU students have 24-hour access to the extensive online Michigan State University electronic library, including databases and electronic journals.

ROTATION REQUIREMENTS

REQUIREMENT	SUBMISSION METHOD	DUE DATE Please refer to D2L for actual (month/day) due dates
Quizzes	D2L	Last day of Rotation
PowerPoint Presentation	D2L	Last day of 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

REQUIREMENT	SUBMISSION METHOD	DUE DATE Please refer to D2L for actual (month/day) due dates
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

ACADEMIC

1. Quizzes: Completion of quiz assignment on D2L associated with each module. Satisfactory completion of the 17 quizzes with an overall 80% score is necessary for the completion of the course.
2. PowerPoint presentation: Preparation of a PowerPoint on topic of choice in radiology with presentation to local faculty and copy to MSU radiology via course dropbox in D2L. This is due before the end of the 2nd week of this rotation.

CLINICAL

1. Attending Evaluation of Rotation: A satisfactory evaluation of the student by an attending physician. The determination of a satisfactory attending evaluation is governed by the College's Policy for Retention, Promotion, and Graduation. This evaluation is due after the rotation is complete and must be submitted to the hospital's Medical Education office.
2. Student Evaluation of 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/>. This evaluation is due at the end of the rotation.

No Honors are given for this course.

RADIOLOGY COMPETENCY/LEARNING MODULES

Unit 1 / Module 1: Introduction/Chest Radiography

1. Review X-Ray production
2. Learn image capture mechanisms.
3. Identify radiographic attenuation principles.
4. Review normal chest X-Ray/technical considerations.
5. Compare normal variations/congenital variation in imaging chest anatomy.
6. Identify technical artifacts.

Unit 1 / Module 2: Chest Radiography - Continued/Inflammatory processes and Lobar disease.

1. Review chest radiography positioning

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2. Review chest imaging presentation of inflammatory processes
3. Understand differences in presentation of alveolar and interstitial disease.
4. Understand pleural inflammatory disease.

Unit 1 / Module 3: Chest CT/PET imaging Lung neoplasm

1. Review Computed Tomography operational principles.
2. Understand PET imaging operational principles.
3. Review X-Ray, CT, and PET presentation of lung/mediastinum neoplasm

Unit 1 / Module 4: Chest Radiography/Cardiac Evaluation Pulmonary Embolism

1. Review cardiac evaluation with diagnostic imaging techniques – application and interpretation.
2. Review congestive heart failure evaluation with diagnostic imaging.
3. Identify cardiac ultrasound techniques and appearances.
4. Review coronary angiography techniques.
5. Understand CT evaluation of the heart techniques and appearances.
6. Review MRI evaluation of the heart techniques and appearances
7. Understand Radionuclide cardiac imaging – perfusion, blood pool and metabolism techniques and appearances.
8. Understand principles, techniques, and status of pulmonary embolism detection.

Unit 2 / Module 1: Imaging Evaluation of the Abdomen

1. Review abdomen evaluation imaging technologies – their application and interpretation
2. Understand renal calculi disease evaluation.
3. Recognize intestinal obstruction/ileus evaluation utilizing x-ray.
4. Understand pneumoperitoneum evaluation.

Unit 2 / Module 2: Gastrointestinal Imaging

1. Understand the utilization of positive and negative contrast agents in the GI tract including both GI studies and CT.
2. Identify the different varieties of GI tract diverticula.
3. Understand and identify hiatal hernia.
4. Understand the variable causes of GI tract obstruction, i.e., foreign bodies, ulcer disease, neoplasm, volvulus & hernia.
5. Identify inflammatory disease of the GI tract, infection, ulcer disease, regional enteritis, ulcerative colitis, appendicitis & diverticulitis.
6. Recognize neoplastic disease of the GI tract.

Unit 2 / Module 3: Hepatobiliary disease, Pancreatic Disease

1. Review and understand the imaging modalities used in hepatobiliary and pancreatic evaluation including x-ray, radioisotope, ultrasound, CT, and MRI
2. Understand the imaging presentation of gallbladder pathology including cholecystitis and cholelithiasis.
3. Understand the imaging presentation of focal and diffuse liver diseases including cirrhosis, hepatitis, vascular abnormalities, and neoplasm.
4. Review and understand the appearance of pancreatic disease including pancreatitis and neoplasm.

Unit 2 / Module 4: Evaluation of the urinary tract

1. Review and understand the imaging modalities utilized in evaluation of the urinary tract including x-ray, ultrasound, nuclear medicine, CT, MRI, and PET
2. Review the imaging anatomy of the urinary tract.
3. Understand the nature and imaging appearance of various renal calculi.
4. Understand the relative benefits and risks of iodinated contrast agents utilized in diagnostic x-ray base imaging.
5. Understand the imaging appearances of various developmental anomalies of the urinary tract.
6. Understand the imaging presentation of neoplasms affecting the urinary tract.
7. Understand the imaging approach to conditions affecting the prostate gland and the scrotum/scrotal contents.

Unit 3 / Module 1: Musculoskeletal imaging introduction

1. Review and understand the imaging modalities utilized in the evaluation of musculoskeletal structures including x-ray, ultrasound, nuclear medicine, CT, MRI, and PET
2. Review the normal anatomy of bone and the normal ossification structures.
3. Review and understand the imaging evaluation and findings associated with skeletal trauma and fracture.
4. Understand the descriptive terms utilized in the description of fractures and dislocations.
5. Demonstrate an understanding of the principles related to the development of stress injury to musculoskeletal structures.
6. Understand the varied appearance of musculoskeletal soft tissue injuries utilizing US and MRI

Unit 3 / Module 2: Bone tumors and tumor like conditions of bone

1. Review and understand the imaging techniques utilized in the evaluation of bone tumors and tumor like conditions of bone including x-ray, CT, MRI, and Nuclear Medicine
2. Review the descriptive terms utilized in the evaluation of bone lesions.
3. Understand the steps in the evaluation of bone lesions including the modalities and the appropriate sequence of evaluation.
4. Review and understand the imaging appearance of benign and malignant neoplastic processes involving bone.
5. Review the imaging appearances of infection involving the skeletal system.
6. Develop an awareness of other bone abnormalities that may mimic more serious conditions and their imaging appearance.

Unit 3 / Module 3: Imaging presentations of arthritis & imaging evaluation of the aging skeletal system

1. Review and understand the imaging evaluation of the various sero-negative and sero-positive arthritides.
2. Understand the imaging approach to evaluation of declining bone mass in the aging adult.

Unit 3 / Module 4: Pediatric Fractures & other unusual bone diseases

1. Identify and describe Salter-Harris fractures.
2. Identify and describe findings and mechanisms of injury of fractures peculiar to the pediatric population.
3. Understand the mechanisms and appearances of delayed and non-union fractures.

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4. Demonstrate an understanding of the appearance of significance of, and cause of tendon insertion avulsion injuries.
5. Demonstrate an awareness of various skeletal manifestations of various defects of osteochondral structures and their appearance by diagnostic imaging.
6. Demonstrate an awareness of skeletal manifestations of vascular compromise abnormalities and their appearance by diagnostic imaging.

Unit 4 / Module 1: Spine evaluation

1. Understand the techniques of evaluating the appearance of the spine utilizing imaging techniques including x-ray, CT, and MRI
2. Recognize and understand developmental anomalies of the spine that may be demonstrated with diagnostic imaging techniques.
3. Recognize and understand the appearance of spine injury including both fractures and dislocations with the knowledge of the appropriate modality to choose.
4. Recognize and understand the appearances related to vertebral disk disease using imaging technologies including x-ray, CT, and MRI
5. Understand the basic principles of myelography and its value in evaluating the thecal sac, cord, and roots.

Unit 4 / Module 2: Neuroradiology

1. Review and understand the imaging modalities utilized in the evaluation of the neural axis.
2. Review the findings related to head trauma using imaging technologies.
3. Understand the imaging of pituitary disease.
4. Understand the imaging of, and diseases affecting the orbits.
5. Understand the imaging appearances of primary and metastatic benign and malignant brain neoplasms.
6. Understand the appropriate imaging work-up of headache and the imaging appearances of various underlying etiologies for headache.
7. Understand the application of imaging modalities in the diagnosis of intracranial vascular abnormalities.

Unit 4 / Module 3: Imaging evaluation of facial and neck abnormalities

1. Review imaging of pediatric airway disease, techniques, and findings
2. Review evaluation of swallowing difficulties originating in the neck by imaging techniques
3. Review imaging of congenital cystic structures arising in the neck
4. Understand imaging of facial and neck trauma
5. Review imaging of infectious processes affecting the facial structures and neck

Unit 4 / Module 4: Pelvic ultrasound

1. Review and understand the principles of diagnostic ultrasound and its application to pelvic structure.
2. Review and understand the application of ultrasound in the evaluation of ovarian disease including cysts, torsion, and neoplasm.
3. Review and understand the application of ultrasound in evaluation of diseases of the uterus including infection and neoplasm.
4. Review and understand the applications of ultrasound to the evaluation of pregnancy and its

complications including ectopic pregnancy and placental abnormalities.

Unit 4 / Module 5: Pediatric Imaging

1. Review and understand the differences inherent in the imaging of the pediatric patient compared to the adult patient.
2. Understand the three main types of respiratory distress that may be encountered during the newborn period.
3. Review and understand the various developmental anomalies that can be evaluated with diagnostic imaging.
4. Review and understand the application of the various imaging modalities in the pediatric population.

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.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 offered on this course. As determined by the Instructor of Record, the student will receive an **N grade for the course** if all assignments are **not completed** successfully by (the Tuesday) two 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

CLINICAL RESPONSIBILITIES

- Students are expected to function collaboratively on health care teams that include health professionals from other disciplines in the provision of quality, patient-centered care.

ACADEMIC RESPONSIBILITIES

- Students are expected to identify, access, interpret and apply medical evidence contained in the scientific literature related to patient's health problems.
- Students are expected to: assess their personal learning needs specific to this clinical rotation, engage in deliberate, independent learning activities to address their gaps in knowledge, skills, or attitudes; and solicit feedback and use it on a daily basis to continuously improve their clinical practice.

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 that are necessary for successful program completion.

Students are expected to take minimal time off outside of vacation periods built into student schedules and should only request additional time off in the rare events and circumstances outlined below.

Specific courses may have additional absence requirements from this general clerkship policy, and it is the student's responsibility to adhere to those requirements according to the respective course syllabus.

Excused Absences

Students must obtain documented approval for any full- or partial-day absence on a rotation. **Excused absences** require the completion of the *Clerkship Program Excused Absence Request Form* by taking the following steps:

- Obtain appropriate signatures on the *Clerkship Program Excused Absence Request Form* at least 30 days prior to the date of the absence. An absence due to a sudden emergency is the exception to the 30-day advanced notice rule.
- Upload the completed *Clerkship Program Excused Absence Request Form* to the 'Excused Absences' folder (within the 'My Personal Documents' section) of a student's Medtrics profile.

Unexcused absences are full- or partial-day absences taken without the proper completion of the *Clerkship Program Excused Absence Request Form*, or any absences not covered in the Clerkship Attendance Policy. Unexcused absences are considered unprofessional and will result in a report to the Spartan Community Clearing House and/or the MSUCOM Committee on Student Evaluation (COSE). Unexcused absences may also have a negative impact on a student's rotation grade or evaluation.

Students are not allowed to be absent from the first day of any rotation.

- Due to the onboarding plans at most rotation sites, students must attend the first day of every rotation. Students must plan accordingly for personal days, interview days, COMLEX, etc.

Maximum time off any rotation*

Length of Rotation	Maximum Number of Days Off	
4 weeks	2 days	Should an absence exceed these limits, the student is responsible for requesting additional days off from the Associate Dean for Clerkship Education via email (COM.Clerkship@msu.edu) prior to the absence.
2 weeks	0 days	

**Exception: A fourth-year student may be absent a total of 4 days on any 4-week rotation or 2 days on any 2-week rotation during the months of October-January for interview purposes only. If interview absences exceed these totals, the student must submit a Clerkship Program Excused Absence Request Form (with appropriate signatures obtained from the rotation attending and rotation site) to the Associate Dean for Clerkship Education via email (COM.Clerkship@msu.edu) prior to the absence.*

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Absence Type	Qualifications	Maximum Number of Days Off	Details	Required Approval from Associate Dean for Clerkship Education
Personal Day	May be used at the discretion of the student (example: illness, physician appt., conference time, etc.). <u>Total</u> days off any one rotation (including personal days off) cannot exceed two on any one 4-week rotation.	Five total days per academic year (July-June)	While personal days may be used at the discretion of the student, the <u>total</u> days off any one rotation (including personal days off) cannot exceed two on any one 4-week rotation, i.e., students cannot use all 5 days on one rotation.	No
Jury Duty	Court documentation must accompany the <i>Clerkship Program Absence Request Form</i>	N/A	Jury duty, when obligated, is not considered a personal day absence.	Yes
Hospital-organized community events	Example: Special Olympic Physicals	N/A	These events would be considered part of the rotation and not a personal day absence.	No
Examination	COMLEX USA Level 2 CE/USMLE Step 2 CK/Canadian MCCEE	1 day		No
	COMAT/NBME shelf examinations	Students have the time off to take the examination only	Students should be reporting to rotation before/after examination.	No
Prolonged Illness, Bereavement, Maternity Leave	Medical related absence or bereavement	Determined on a case-by-case basis	Students must contact the Associate Dean for Clerkship Education directly (enright4@msu.edu) to discuss time off rotations.	Yes

Clerkship Program Excused Absence Request Forms: Once appropriate approval signatures are obtained, forms must be uploaded to the 'Excused Absences' folder within each student's Medtrics profile. Students should maintain a copy for their records.

POLICY FOR MEDICAL STUDENT SUPERVISION

Supervisors of the Medical Students in the Clinical Setting

The MSUCOM curriculum includes required clinical experiences in a variety of clinical learning environments. The role of the student is to participate in patient care in ways that are appropriate for the student's level of training and experience and to the clinical situation. The student's clinical activities will be under the supervision of licensed physicians. This supervising physician may delegate the supervision of the medical student to a resident, fellow, or other qualified healthcare provider; however, the supervising physician retains full responsibility for the supervision of the medical students assigned to the clinical rotation and must ensure his/her designee(s) are prepared for their roles for supervision of medical students.

The physician supervisor and his/her designee(s) must be members in good standing in their facilities. They must have a license appropriate to his/her specialty of practice and be supervising the medical student within that scope of practice as delineated by the credentialing body of the facility.

Level of Supervision/Responsibilities

Clinical supervision is designed to foster progressive responsibility as a student progresses through the curriculum, with the supervising physicians providing the medical student opportunity to demonstrate progressive involvement in patient care. MSUCOM students will be expected to follow clinical policies of the facility regarding medical records and clinical care. Medical student participation in patient history/physical exam, critical data analysis, management, and procedures will include, but are not limited to, factors such as:

- The student's demonstrated ability
- The student's level of education and experience
- The learning objectives of the clinical experience

First- and second-year medical students will be directly supervised at all times (supervising physician or designee present or immediately available).

Third- and fourth-year medical students will be supervised at a level appropriate to the clinical situation and that student's level of experience. For some tasks, indirect supervision may be appropriate for some students. Direct supervision would be appropriate for advanced procedures.

Supervising physicians will provide medical students with timely and specific feedback on performance. The supervising physician will complete a mid-rotation evaluative discussion with the medical student. Supervising physicians will complete a summative evaluation and are encouraged to contact the course/clerkship director with any gaps in student performance.

Medical students with any concern regarding clinical, administrative, and educational or safety issues during his/her rotation will be encouraged to contact the supervising physician or clerkship/course director.

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. The Handbook is updated annually during the summer semester, with changes effective when posted. Any subsequent changes are effective as of the date of issuance.

Students shall adhere to Michigan State University and College of Osteopathic Medicine policies, procedures, agreements, and guidelines. Violations of any regulation are subject to disciplinary action, up to and including program dismissal.

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.

This framework is built around the acronym CORE, representing Collaboration, Opportunity, Responsibility, and Expertise. Each domain encompasses values and examples of how they are demonstrated.

- **Collaboration:** Working together with others
 - Interactive: Interact effectively and respectfully with people you encounter; demonstrate honesty, genuineness, humility, and compassion
 - Dynamics and Communication: Demonstrate respect, civility, and courtesy in communication; communicate effectively with diverse individuals and groups for a variety of purposes using available technologies; employ active listening.
 - Use of Feedback: Identify sources of feedback; deliver and receive effective feedback for initiatives, evaluations and assessments, quality improvements, conflict resolution, and peer review.
- **Opportunity:** Encouraging an environment of mutual support
 - Shared Leadership: Exhibit advocacy for self and others; accept situational leadership as needed; establish mutual support and respect; participate as a support for others regardless of title or position.
 - Problem-solving: Recognize and define problems; analyze data; implement solutions; evaluate outcomes; include the perspectives of others
 - Decision-making: Fulfill commitments; be accountable for actions and outcomes; discuss and contribute your perspective in group settings; listen to multiple viewpoints prior to making a decision

- **Responsibility:** Supporting a shared culture of accountability
 - Effective Use of Time and Resources: Invest time, energy, and material resources efficiently in order to provide effective services; demonstrate integrity and stewardship of resources.
 - Critical Thinking Skills: Recognize and differentiate facts, illusions, and assumptions; question logically; identify gaps in information and knowledge.
 - Mindfulness and Self-Care: Actively engage in surrounding circumstances and activities; self-assess, self-correct, and self-direct; identify sources of stress and develop effective coping behaviors.
- **Expertise:** Having relevant skills or knowledge
 - Core of Knowledge: Develop core professional knowledge; apply the knowledge in clinical, academic, and administrative settings.
 - Technical Skills: Show competency and proficiency in performing tasks that are integral to the scope and practice of your profession; identify needs and resources for learning; continually see new knowledge and understanding in your profession.

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

To facilitate communication from faculty and staff to students, students are required to have a functioning MSU email address. Students are responsible for checking their MSU email accounts daily and maintaining their MSU mailboxes 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 clinical education 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.

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 EXPOSURE PROCEDURE

A form 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 on the Clerkship Medical Education page of the MSUCOM website [here](https://com.msu.edu/current-students/clerkship-medical-education) (<https://com.msu.edu/current-students/clerkship-medical-education>).

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

STUDENT VISA

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 a **Verified Individualized Services and Accommodations** (VISA) form. Students must present their VISA forms 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 VISA form 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
Unit 1-4 Quizzes	D2L	80% cumulative	For evaluation submission only	Failure to complete the course requirements
PowerPoint Presentation	D2L	Submit	For evaluation submission only	Failure to complete the course requirements