RAD 609
Radiology Clerkship
Selective/Elective Clerkship Rotation Syllabus

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RAD 609 Curriculum Access
http://education.rad.msu.edu/Courses/RAD_Clerkship/index.html

MSUCOM constantly strives to improve and advance its curriculum through innovation while assuring compliance with current AOA accreditation standards. While major changes are generally instituted at the beginning of each academic year, minor changes may be implemented semester to semester.

Please be mindful of the need to read your syllabi before beginning your rotations.
**General Description**

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 week, 3 credit hours or four week, 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.

**Educational Purpose and Goals**

Students must have the opportunity to improve their understanding of the radiological aspect of medicine. The purpose of this rotation is to familiarize the student with common radiological investigational modalities, their indications and basic interpretation. They are expected to gain an understanding of the most appropriate use of radiological examinations in patient management including sequence of examinations, monetary costs, patient inconvenience and discomfort. Additionally the student will develop an understanding of the impact of diagnostic imaging on the patient and society.

**Principal Teaching Methods**

1. Students will rotate in the designated radiology department for the designated time of the rotation.
2. Daily assignments involve observing clinical work in the department, review of the components of a cross campus 16 unit on-line course, utilization of; departmental library, MSU library, book, periodical, and digital resources.
3. Weekly Seminars and Lectures – Attend appropriate conferences within the institution where radiology content may be presented in discussed. (i.e. Grand Rounds, Tumor Board, CPC, M&M Conferences, Radiology Conference etc.).
4. Students may participate in the Tuesday Didactic session in East Lansing if approved by the supervising radiologist.
5. Students will observe plain film Conventional Radiology (CR) images, Ultrasonograms, Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI) images and Nuclear Medicine (NM) and Positron Emission Tomography (PET) scans where available. Additionally, the students may observer the performance of the actual scans and procedures that may take place in the department. The student will observe interpretations as performed by attending radiologists, fellows, and residents dependent on resources in the designated radiology department.

**Educational Content**

1. Mix of diseases: The disease mix includes all patients, inpatient and outpatient, who are undergoing radiological testing.
2. Patient characteristics: Radiology cases include both outpatient and inpatient cases as determined by the patient mix at the host department. Demographic and ethnic mix approximates that of the local community. The extensive socioeconomic diversity of the various participating
institutions and patient populations support a stimulating training experience with broad diagnostic challenges.

3. Learning venues: Each of the participating radiology departments provides a stimulating and balanced exposure to the patients in that community.

4. Procedures: The types of radiological examinations and procedures available for observation are listed below:
   - Chest X-Rays
   - Computed Tomography
   - Magnetic Resonance Imaging
   - Ultrasonography
   - Nuclear Imaging
   - Positron Emission Tomography (not available at all sites)
   - Fluoroscopy

5. Ancillary individuals interacted with may include residents, fellows, technologists, and staff.

6. Duration: The rotation is intended for a 2-4 week block.

7. Structure: Typically 8 AM to 5 PM daily. The assignment may vary according to the individual departments’ clinical schedule. A schedule of daily assignments will include at minimum:
   - Clinical time 5 days a week.
   - Reading educational materials with daily assignments
   - Viewing of the MSU Radiology On-line module series and other on-line resources such as the Harvard University Radiology online teaching series and the RSNA resources for medical students.
   - Attend hospital and department conference including interdisciplinary and radiology specific conferences.
   - Students are expected to continue to attend any mandatory conferences and didactic sessions of their college during the rotation.

**Principal Ancillary Educational Materials**

1. Textbooks from which selected reading are assigned:
   - Felson’s Principles of Chest Roentgenology, A Programmed Text, Third Ed. by Lawrence R. Goodman
   - Essential Radiology, Second Edition by Richard B. Gunderman
   - Chest, Abdomen, Bone and Clinical Skills, A Problem-Based Text, Third Edition by Amorosa, Novelline, and Squire.

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

3. 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.
Methods of Evaluation

The radiologist supervising student education at each host department completes standard evaluations in place for the clerkship rotations.

Testing- and evaluation

It is highly recommended that a radiology related PowerPoint presentation to be presented as appropriate at the host department and submitted to the MSU Radiology Department education coordinator for review.

Rotation Specific Competency Objectives

1. To 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.
2. To 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.
3. To 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.
4. To encourage correlation of diagnostic images with previously learned normal and pathologic anatomy and pathophysiology.
5. Increase the student’s understanding and recognition of common processes and pathology available from diagnostic images.
6. Introduce students to the indications, contra-indications, patient preparation, post-procedure care, and relative radiation exposure for various diagnostic imaging exams.
7. Know the relative costs of different diagnostic imaging exams and be able to plan and sequence patient exams that optimizes outcome and cost-effective patient care.
8. Increase the students understanding of image digitization, how variables in digitization influence resolution and the computer's impact on diagnostic imaging (PACS).

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Student Responsibilities

Course participants will meet the preceptor on the first day of the rotation at a predetermined location to be oriented to rotation hours, location(s), and expected duties and responsibilities while on-service.
### Rotation Clinical Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Submission Method</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Evaluation of Rotation</td>
<td>To be appropriately submitted per the instructions at the end of each evaluation form</td>
<td>Final Day of Rotation</td>
</tr>
<tr>
<td><em>the determination of a satisfactory attending evaluation is governed by the University’s Policy for Retention, Promotion, and Graduation</em></td>
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<tr>
<td>Student Evaluation of Rotation</td>
<td>“Evaluate” Link in Kobiljak Schedule (this link will activate on the final Monday of the rotation)</td>
<td>Final Day of Rotation</td>
</tr>
</tbody>
</table>

### Unsatisfactory Clinical Performance

A student’s clinical performance will be assessed through the Attending Evaluation. A satisfactory Attending Evaluation is required for completion of the clinical requirements for the course.

Unsatisfactory Attending Evaluations are governed by the Policy for Retention, Promotion and Graduation. Evaluations with below average scores in two or more categories defined as rankings of Needs Improvement/Unsatisfactory (on a scale of Needs Improvement/Unsatisfactory-Exceptional) or 3 and below (on a numerical scale of 1-7) will be referred to the Department Chairperson/Instructor of Record for review and grade determination.

Any student with two or more marginal evaluations will be referred to the COSE Clerkship Performance Subcommittee for review.

**IMPORTANT NOTE:** The student will maintain an “Extended” (ET) grade until they have successfully completed all academic and clinical requirements for the course.

### “N” Grade and Remediation

[http://com.msu.edu/Students/Policies_and_Programs/Remediation_Policy.htm](http://com.msu.edu/Students/Policies_and_Programs/Remediation_Policy.htm)

A student who receives an “N” grade will be required to appear before the Committee on Student Evaluation (COSE) Clerkship Performance Subcommittee for review of the student's overall performance. The Subcommittee may recommend that the student who has received an "N" grade be permitted to remediate the “N” grade (see below) or academically dismissed. If a student is recommended for dismissal, the student will appear before COSE to have their status in MSUCOM determined. COSE will review the student’s academic/clinical performance; determine whether dismissal is appropriate or if the student’s circumstances warrant an opportunity for continuation in the curriculum. The student’s eligibility to remediate will be determined following this COSE decision.

Remediation is the method by which course objectives will be met after receiving an "N" grade. Remediation will be offered only after the student’s eligibility for remediation has been determined.
To successfully remediate an “N” grade, a student must demonstrate mastery of the course objectives. To do this the student may be required to retake the course or enroll and participate in a College directed study course demonstrating successful mastery of the course objectives.

Upon remediation of the “N” grade, the original “N” grade remains on the permanent transcript along with the grade, “P” or “N,” for the remediation experience.

**MSU College of Osteopathic Medicine Standard Policies**

The following are standard MSUCOM policies across all Clerkship rotations.

**ATTENDANCE POLICY**

Attendance at all scheduled Clerkship activities is mandatory.

If a student is unable to be present for a scheduled clerkship activity because of extenuating circumstances, the student is required to complete a Clerkship Excused Absence Request form. In all cases except for emergencies or sudden illness, requests for scheduled absences are to be submitted at least 30 days prior to the date(s) of absence. Absences are not approved until the form is completed with all required signatures. Once approved, the student is required to notify their preceptor of their absence within 24 hours. Failure to complete this form or obtain required signatures will result in an unexcused absence from the rotation. Unexcused absences are considered unprofessional behavior and could be noted as a mark of unprofessionalism on the student's performance evaluation, and may lead to failure of the rotation.

An absence request for the first or last day of the rotation will be denied. All absences (excused or unexcused) must be made up as specified on the Excused Absence Form as outlined under the conditions of approval. Makeup experience will be determined by the Director of Medical Education and may include additional clinical day(s) or written assignment(s).

If a student has an emergency or sudden illness they should immediately notify the Director of Medical Education and rotation preceptor. The excused absence request form must be submitted to the Medical Education Office within 24 hours of the original emergency or sudden illness notification.

**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 conduct themselves at all times 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 relationship between faculty and student 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.

FACULTY RESPONSIBILITIES

It is the responsibility of the college faculty to specify the limits of authorized aid (including but not limited to exams, study aids, internet resources and materials from senior students) in their syllabi, and it is the responsibility of students to honor and adhere to those limits. Course instructors shall inform students at the beginning of the semester of any special criteria of academic honesty pertinent to the class or course.

It is the responsibility of the clinical faculty to provide students with ongoing feedback during rotation upon request. Clinical faculty are generally recommended (though not required) to limit student assigned duty hours from 40 to 60 hours weekly (and not exceeding 60 hours). Both faculty and students are to be treated fairly and professionally in order to maintain a proper working relationship between trainer and trainee.

COURSE GRADES

- **P-Pass** – means that credit is granted and that the student achieved a level of performance judged to be satisfactory according to didactic and clinical performance by the department.
- **N-No Grade** – means that no credit is granted and that the student did not achieve a level of performance judged to be satisfactory according to didactic and clinical performance by the department.
- **ET-Extended Grade** – means that a final grade (“Pass” or “No Grade”) cannot be determined due to one or more missing course requirements. Once all course requirements have been completed, received, and processed, the ET grade will be changed to a final grade. An “ET” will NOT remain on a student’s transcript.

ROTATION EVALUATIONS

**Attending/Faculty/ Resident Evaluation of Student**

Students are responsible for assuring that his/her clinical supervisor receives the appropriate evaluation form. Forms can be accessed via the “Attending Evaluation” link in the student’s Kobiljak online Clerkship schedule.

Students should assertively seek feedback on his/her performance throughout the course of the clinical rotation. Students should also sit down and discuss the formal evaluation with the clinical supervisor.

Students should keep a copy of the evaluation and leave the original with the Medical Education Office at the clinical training site where that office will review, sign, and forward the completed form to the COM Office of the Registrar. It is important to know that evaluations will not be accepted by the COM Office of the Registrar if submitted by the student. Any evidence of tampering or modification while in the possession of the student will be considered “unprofessional behavior” resulting in an “N” grade and review by the Committee on Student Evaluation (COSE) and/or the College Hearing Committee.

Grades are held until all rotation requirements, including evaluation forms, are
received. Be sure you are using the correct form.

*Student Evaluation of Rotation*

Students will submit their rotation evaluations electronically at the conclusion of every rotation by accessing their online schedule through Kobiljak.

**EXPOSURE INCIDENTS PROTOCOL**

A form has been developed by the University to report exposure incidents. These forms will be on file in your DME's office. You can also access the form at [www.com.msu.edu/AP/clerkship_program/clerkship_documents/exposure.pdf](http://www.com.msu.edu/AP/clerkship_program/clerkship_documents/exposure.pdf). Please make yourself familiar with the procedure and the form.