

OSS 642
NEUROSURGERY
Selective/Elective Clerkship Rotation Syllabus

OSTEOPATHIC SURGICAL SPECIALTIES

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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. This syllabus is active for any rotation August 1, 2020 to July 31, 2021.

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PRE-APPROVAL AND PRE-REQUISITES

- Approvals from the facility where the rotation will occur and COM Clerkship Office COM.clerkship@msu.edu is required for every selective/elective rotation.

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 in collaboration, as appropriate, with residents and/or fellows. The purpose of this Neurosurgery 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 them the link into a browser window and the material should load for you.

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

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 in 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.
6. Review the Entrustable Professional Activities and Osteopathic Core Competencies located on D2L under the Additional Information module.

OBJECTIVES

The Student should be able to discuss the following at the conclusion of the rotation:

Fundamentals of Neuroimaging

- Recognize common spine fractures and dislocations
- Differentiate on computerized images between blood, air, fat, CSF, and bone
- Distinguish the typical imaging characteristics of epidural hematoma, acute subdural hematoma, chronic subdural hematoma, intracerebral hemorrhage, and subarachnoid hemorrhage and tumor.

Intracranial Hypertension

- Define cerebral perfusion pressure, and explain how it is used in the management of patients with elevated intracranial pressure
- Describe how blood gases, fluids and electrolyte balance influence intracranial pressure
- Describe clinical manifestations of acute brain herniation, including transtentorial, uncal, & subfalcine herniation syndromes

Diagnosis and Management of Ischemic Cerebrovascular Disease

- Differentiate the radiographic presentations of the different types of ischemic stroke: embolic, hemodynamic, and lacunar
- Describe the roles and indications of the following treatment options in ischemic disease: medical management, risk factor modifications and surgical therapy

Diagnosis and Management of Intracerebral Aneurysm/AVM

- Distinguish and define the signs and symptoms of ruptured and un-ruptured aneurysm/AVM
- Describe the diagnostic significance and prognostic importance in distinguishing metastatic cerebral or spinal disease from a primary process
- Understand the treatment alternative dependent on the pathology: open surgical resection vs. gamma-knife radiosurgery vs. whole brain/spine radiation

Diagnosis and Management of Nontraumatic Neck and Back Problems

- Define radiculopathy, myelopathy, and cauda equine syndrome

Diagnosis and Management of Peripheral Nerve Injury and Entrapment

- Describe the signs and symptoms of carpal tunnel syndrome and ulnar neuropathy, and outline the surgical indications

Diagnosis and Management of Hydrocephalus and Spinal Dysraphism

- List common symptoms and signs of normal pressure hydrocephalus in adults
- Define communicating and noncommunicating hydrocephalus and describe the differences in their treatment
- List two examples each of open and closed spinal dysraphism

The Neurological Examination

- Evaluate patient's mental status and speech
- Examine the cranial nerves
- Examine central and peripheral sensory function
- Examine motor function
- Examine cranial and peripheral reflexes
- Examine cerebellar function and gait

Diagnosis and Management of Head Trauma

- Assign the Glasgow Coma Score
- Initiate management of elevated intracranial pressure in head trauma
- Define concussion, brain contusion, and diffuse axonal injury, and initiate management of each
- Distinguish anatomically and radiographically acute subdural and epidural hematoma, & describe the surgical indications for each
- Describe the initial management of penetrating high and low velocity head trauma
- Describe the management of chronic subdural hematoma

Diagnosis and Management of Brain Tumor and Abscess

- Know the relative incidence and location of the major types of primary and secondary brain tumors
- Describe the general clinical presentations of brain tumors in the following locations: cerebral hemisphere, cerebellum, brainstem, pituitary, and cerebellopontine angle
- List the advantages and limitations of the following diagnostic tools used in the evaluation of brain tumors: CT, MRI, MR spectroscopy, and angiography
- List the most common etiologies of cerebral abscess

Diagnosis and Management of Headache

- Distinguish the radiographic presentation of the major causes of intracranial hemorrhage: hypertensive intracerebral hemorrhage, amyloid intracerebral hemorrhage, subarachnoid hemorrhage, arteriovenous malformation hemorrhage, tumor hemorrhage, and coagulopathy hemorrhage
- Apply the following diagnostic tools in evaluation of acute headache (CT, MRI, angiogram, and lumbar puncture)

- Differentiate of symptomatology of migraine, cluster, tension, and sinusitis headache

Spine Trauma

- Describe the rapid assessment of the patient with spinal trauma
- Recognize the common spine fractures on X-ray
- Initiate acute management of spinal cord injury including immobilization, steroids, and systemic measures

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 here: <https://com.msu.edu/about-us/accreditation/program-overview>. From this website, you may find the Program Level Educational Objectives more definitively outlined here: <https://com.msu.edu/application/files/3115/5613/8820/Program-Level-Educational-Objectives-KSA.pdf>.

STUDENT RESPONSIBILITIES

During the weeks of the rotation, the student is required to meet clinical and academic responsibilities:

- *The student **will** meet the following **clinical responsibilities** during this rotation:*
 - 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.

- *The student **will** meet the following **academic responsibilities** during this rotation:*
 - Students are expected to identify, access, interpret and apply medical evidence contained in the scientific literature related to patients 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.

ROTATION CLINICAL REQUIREMENTS

Requirements	Submission Method	Due Date
Attending Evaluation of Rotation*the determination of a satisfactory attending evaluation is governed by the College’s Policy for Retention, Promotion, and Graduation*	To be appropriately submitted per the instructions at the end of each evaluation form	Final Day of Rotation
Student Evaluation of Rotation	“Evaluate” Link in Clerkship Schedule (this link will activate on the final Monday of the rotation)	Final Day of Rotation
Activity Log	Submit via the Dropbox in D2L	By 11:59 pm the last day of the rotation

Activity Log

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

In this log you will need to outline all of 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 page 16 of this syllabus or under the Activity Log Module on D2L for this course.

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 Clerkship schedule: http://hit-filemakerwb.hc.msu.edu/Clerkship/login_student.html.

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. Note that the clinical supervisor and the DME from the rotation hospital are required to sign the form.

It is important to know that evaluations will not be accepted by the Office of Student Services 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 Heading Committee.

Student Evaluation of Rotation

Students will submit their rotation evaluations electronically at the conclusion of every rotation by accessing the evaluation system at:

http://hit-filemakerwb.hc.msu.edu/Clerkship/login_student.html

OSS 642 Corrective Action Policy

There is no Corrective Action Policy or Plan as there are no graded components to the OSS 642 rotation. All items with the exception of the attending evaluation are under the direct control of the student and there is no reason that they cannot be completed in a timely fashion. If the student has an extension in the rotation due to some verifiable reason, then they will receive this same extension for submitting the required end of rotation paperwork.

IMPORTANT NOTE: Attending evaluations do not follow the above “Corrective Action” process. Marginal Attending Evaluations will be reviewed on a case-by-case basis by the department, where the Instructor of Record will then determine whether to give the student a Pass or an No Grade for the rotation. If the department determines students will be given an N grade in light of the evaluation, they will then proceed to the “MICHIGAN STATE UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE POLICY FOR RETENTION, PROMOTION, AND GRADUATION FOR THE DOCTOR OF OSTEOPATHIC MEDICINE DEGREE” process

<https://com.msu.edu/application/files/1215/7538/8584/Policy-for-Retention-Promotion-Graduation.pdf>

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.

END OF ROTATION EXAMS

MSUCOM Department of Osteopathic Surgical Specialties does not give an End of Rotation Examination for their Selective/Elective Rotations. Students in their fourth year should be preparing for COMLEX 2 CE and PE during their rotations and maximize your knowledge regarding this clerkship rotation’s field of surgery.

MSU College of Osteopathic Medicine Standard Policies

The following are the standard MSUCOM policies students must adhere to across rotations.

Clerkship Attendance Policy

In order to gain the knowledge and skills to successfully complete the MSUCOM clerkship program, consistent participation/attendance in program activities is essential. Any time off must not interfere with the quality of the rotation.

1. In the event a student needs to be absent from any rotation for the reasons listed below and permissible by the rotation syllabus, students may request time off.
2. Any absence (unless emergent) must be approved in advance (at least 30 days) of absence by the medical education department (student coordinator/director or DME), utilizing the Clerkship Program Excused Absence Request Form.
3. A student may not be absent more than 2 days on any one 4 week rotation (no time off allowed for rotations of 2 weeks or less) for the reasons below (exception Interview absences or Conference absences as below).
4. Any additional time off any one rotation must be approved by the MSUCOM Instructor of Record for the course the absence will occur.

Absence due to interviews:

For the purpose of interviewing only, a student may be absent 4 days on a 4 week rotation (2 days on a 2 week rotation) during the months of September to January in the OMS year 4. Interview invitations must accompany the Clerkship Program Excused Absence Request Form.

Absence due to examinations:

Examination	Maximum Time Off (includes travel time)
COMLEX USA Level 2 CE/USMLE Step 2 CK/Canadian MCCEE	1 day
MSUCOM COMLEX PE Simulation at MSU	1 day for each scheduled simulation
COMLEX USA Level 2 PE/USMLE Step 2 CS(Canadian Students Only)	2 days
COMAT/SHELF examinations	Travel time and time for exam

Personal Day Absence:

Students are allowed 5 personal days per academic year in OMS 3 and OMS 4. These days are not carried over from third year to fourth year. These are to be used for illness, physician appointments, and special events (weddings, graduations, special anniversary events) and must not exceed 2 days on any 4 week rotation (#3 above). Prolonged illness and bereavement will be handled on a case by case basis between MSUCOM Director of Clerkship and the base hospital/medical education department. Students must notify rotation team and medical education of emergent/illness absences on day of absence.

Hospital organized community events that might lead to periodic absence from rotations – student participation is encouraged and if base hospital approved, would be considered part of the rotation and not a personal day absence.

Jury duty – when obligated, student participation is not considered a personal day.

Court excuses must accompany any absence. If absence is prolonged, this will be handled on a case-by-case basis between the base hospital/medical education and MSUCOM.

Conference Absence:

While on required/core rotations, no excused absences for any professional meeting will be allowed unless the student is presenting research in which they have participated.

- a. Appropriate paperwork with proof of presentation and copy of conference agenda must accompany the form.
- b. Time off in this situation will be for travel and presentation only.

While on selective/elective rotations: A student may submit a request for an excused absence to attend one (1) professional meeting, time not to exceed 3 days off rotation. The meeting agenda must accompany the Clerkship Program Excused Absence Request Form

<https://com.msu.edu/application/files/1215/7426/0230/Clerkship-Absence-Request-Form.pdf>

Personal vacations/family reunions, etc are not part of this policy. Vacations can be scheduled periodically, provided all curriculum requirements will be met, with the assistance of your Student Services Advocate. Vacations will not be permitted on any core rotation or elective rotation.

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 and 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 the 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 factors, but not limited to:

- The students demonstrated ability

- The students 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 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

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 has been determined, the student may be issued a Verified Individualized Services and Accommodation (VISA) form. Students must present this VISA form to the Clerkship Team (COM.Clerkship@msu.edu), A-332 East Fee Hall, at the start of the semester in which they intend to use their accommodations (for tests, projects, labs, etc.). Accommodation requests received after this date will be honored whenever possible.

If updates or modifications to an existing VISA form are made after the semester begins, it is the responsibility of the student to submit an updated version to the Clerkship Team (COM.Clerkship@msu.edu) if he or she intends to use the new accommodation going forward.

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. In Years 3 and 4, the ET grade is used instead of an “Incomplete (I)” grade. 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.

“N” Grade Policy

Remediation is not offered for Clerkship courses. Any student who receives an N grade in the Clerkship Program will be required to appear before the COSE Clerkship Performance Subcommittee (COSE).

EXPOSURE INCIDENTS PROTOCOL

You must notify your attending and the DME Office of your base institution of the incident. A form has been developed by the University to report exposure incidents. These forms should be on file in your DME's office. While on rotations that occur outside of the base hospital system notify your attending immediately of any exposure and follow the MSU procedure for evaluation and treatment. Please make yourself familiar with the procedure and the form.

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

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.