IM 666
Emergency Medicine Toxicology
Selective/Elective Clerkship Rotation Syllabus

Osteopathic Medical Specialties
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At MSUCOM, we are constantly working to improve our curriculum and to meet new AOA accreditation guidelines. While major changes will generally be instituted at the beginning of the school year, most minor changes may be implemented semester to semester.

Please be mindful of the need to read your syllabus BEFORE beginning your rotations.
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Pre-Approval and Pre-Requisites

- An application is required for every selective/elective rotation.
- 30-day advance application approval required (applies to a rotation add, change or cancellation)
- The Toxicology rotation requires a supervising faculty member who has experience and daily work in a poison control or toxicology consult service. As such, scheduling at least 4 months in advance, with a defined curriculum provided for approval is necessary. The CV of the supervising faculty member, the goals and objectives of their particular rotation, and proposed schedule should be submitted 3 months in advance for approval by the instructor of record. Upon approval and written confirmation by the Instructor of Record, students will receive confirmation from the Office of the Registrar for the course no later than 30 days prior to the 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 (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. This rotation is most amenable to the two week, three credit hour format.

Rotation schedules are not to be submitted until the last Friday-Sunday of the rotation. You must document your actual schedule worked. You are required to document any time off for illness, boards, etc. that caused a deviation from the schedule you were provided. All rotation days must be accounted for.

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 / Instructional Goals & Objectives

Course participants will:

A. Develop an appreciation of the practice of medicine as related to the specialty of the preceptor.

B. Assimilate what they learn and demonstrate their understanding of patient-care through ongoing interaction and dialogue with, as well as formative feedback from, the preceptor.

C. Demonstrate an understanding of the (seven) osteopathic core competencies (as applicable).

1. This elective is designed for the student completing a formal Toxicology rotation at a site with a poison control center and/or a toxicology fellowship only. There are only a few sites in the country that offer these and the ability to obtain access, and arrange participation and travel is solely dependent on the student. The rotation must be set up at least four months ahead of travel, and the student must obtain college and departmental approval. Learning objectives are minimally defined below, and more formally may be detailed as well by the site that is offering the
elective.
II: Clinical Skills

A. The student should complete a thorough medical history including details of current symptoms, previous issues and management efforts, and risk factors that could impact on the diagnosis or management of their current problem.

B. Perform a focused physical exam with appropriate emphasis on the presenting complaint.

C. Interpret common diagnostic tests utilized in the evaluation of the patient with a toxicology emergency, including lab, EKG and x-rays.

III: Socioeconomic: The student will:

A. Appreciate the psychosocial issues that potentially impact the patient’s toxicology disorder or condition (professionalism and sensitivity to schedule disruption and lifestyle modifications for the patient).

Assessment of Clinical Competencies:

1. Patient Care: The student will be able to complete an accurate history and physical exam and accurately document the findings, is the patient being evaluated or treated for a poisoning or drug overdose.

2. Medical Knowledge: The student can demonstrate knowledge of the criteria for diagnosis of poisoning or drug overdose, the typical methods used to encourage ongoing psychiatric care, the likely duration of observation and/or therapy for such conditions.

3. Communication Skills: The student can effectively present the clinical evaluation of a new patient and/or the clinical progress of a continuing patient, and communicate effectively with patients and clinical support staff, as well as the attending physician.

4. Professionalism: The student will demonstrate respect for patients, families, co-workers, and work effectively with ancillary staff.

5. Practice Based Learning: The student will be able to identify and discuss appropriate, evidence based approaches to assist in the diagnosis and management of clinical problems encountered in their patients.

6. Systems Based Practice: The student will be able to incorporate a team approach in the management of complicated wound patients.

7. Osteopathic Principles and Practices: The student should be able to integrate osteopathic principles and treatments in the management of the patient with a chronic wound.

Teaching Methods:
The student is expected to function as a viable member of the supervising physician’s health care team. Assigned student responsibilities can include:
- supervised first patient contact in the office or clinic,
- participation in conducting and the interpretation of diagnostic testing and clinical management.

Evaluation: The student is encouraged to solicit feedback related to his/her clinical performance on a daily basis. The student should receive formative performance evaluations at the mid-point and end of the rotation that outlines faculty perceived strengths and weaknesses related to the student’s
performance that includes recommendations for strengthening his/her performance as warranted.

**Toxicology: Introduction to the Poisoned Patient**

**Objectives**

1. State the basic principles of drug absorption, metabolism, and excretion
2. State the components of the COMA cocktail
3. Discuss the use of activated charcoal, including single and multiple dose, and its contraindications
4. Discuss the use of sorbitol as a laxative and its contraindications
5. Discuss the use of whole bowel irrigation and its indications
6. Discuss the concept of half-life and what it means in terms of antidote treatment and monitoring
7. Discuss the concept of fat soluble, water soluble and first pass effect in the context of an overdose

**Toxicology: Acetaminophen, aspirin, alcohols**

**Objectives**

1. Be able to state the different rates of absorption of various salicylate containing products, and sources of salicylate besides aspirin
2. Be able to discuss the various stages of salicylate intoxication, and the assorted biochemical derangements that occur with each, including the various acid base disturbances
3. Know the signs and symptoms of mild, moderate and severe poisoning with salicylates
4. Be able to discuss the various modalities used to treat mild, moderate and severe salicylate poisoning
5. Know the recommended doses and potentially toxic doses of acetaminophen in adults and children
6. Be able to recognize the stages of acetaminophen poisoning
7. Understand the use and limitations of the Rumack - Matthew nomogram in acetaminophen poisoning
8. Be able to list the metabolic pathways of acetaminophen poisoning
9. Be able to select appropriate therapy for a patient with an acetaminophen overdose
10. Be able to diagram and understand the metabolism of ethanol, isopropyl alcohol, methanol, and ethylene glycol.
11. Know the signs and symptoms and timeline for consequences of ingestion of ethanol, isopropyl alcohol, methanol, and ethylene glycol.
12. Know the appropriate use of antidotes and treatment guidelines for ingestion of ethanol, isopropyl alcohol, methanol, and ethylene glycol.

**Toxicology: CNS stimulants: cocaine, ecstasy, PCP, Crystal Meth, bath salts**

**Objectives**

1. Be able to list the drugs that are considered stimulants.
2. Understand the use of benzodiazepines in the management of the acutely agitated patient.
3. Be able to list the medications and chemicals that lead to hallucinations.
4. Understand the mechanism of hyponatremia and possible seizures from ecstasy.
5. Be able to discuss cocaine related chest pain.
6. Understand the diagnostic scenario of cannabinoid hyperemesis syndrome.
7. Be able to use the eye signs to help differentiate the various stimulants, especially those causing hallucinations.

**Toxicology: Pediatrics: Pediatric Poisoning (NB)**

**Objectives:** By the end of this module, a 4th year medical student will be able to:

1. Identify at least 10 (ten) toxins of which the ingestion of a single pill or a single swallow can be lethal to a pediatric patient less than 2 years of age.

**Readings:** Perform an independent internet search to identify at least 10 ‘One Pill Can Kill’ toxins.
Further objectives may be provided or required by the training site and are required to be submitted and completed in order to pass this rotation.

**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.

**Reference Materials**

There is no assigned textbook. Reading assignments are under the purview of the preceptor. In addition, the following are suggested for the modules provided.

**Syllabus material and power point presentation provided in D2L on the general introduction to the poisoned patient**


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.

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

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Submission Method</th>
<th>Due Date</th>
</tr>
</thead>
</table>
| 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 Kobiljak Schedule  
(this link will activate on the final Monday of the rotation) | Final Day of Rotation |
| Patient Types and Procedure Log | See page 12 at end of syllabus and upload into D2L dropbox for the course | 11pm Last Sunday of Rotation |
| Clinical Shift Schedule/ and on-site curriculum if provided by site | Online D2L Drop Box if you have access to a scanner  
-or-  
Mail to: MSUCOM, Dept. of OMS  
ATTN: Steve Stone  
909 Fee Rd., B315A West Fee Hall  
East Lansing, MI  48824 | Not to be submitted until the last Friday-Sunday of the rotation, and must be the schedule you worked, not what you were scheduled to work |
| Toxicology Quiz on Objectives listed | Online in D2L | Achieve 75% by 11pm on the last Sunday of the rotation. |
IM 666 Toxicology Corrective Action Policy

Following the rotation, the student will take a 16 question post-test examination. Materials will come specifically from the objectives list as above, found in access medicine through MSU library. Exam will be found in D2L. A 75% (12 points) is necessary to pass this portion of the rotation. If the student does not pass the exam a remediation exam will be offered one week after the end of rotation. If the student still does not pass, possible further remediation will be determined by chairperson up to and including the assignment of an N Grade.

Unsatisfactory Clinical Performance

A student’s clinical performance will be assessed through the Attending Clinical Clerkship Rotation Evaluation. Unsatisfactory Attending Evaluations are governed by the Policy for Retention, Promotion and Graduation (4.e).

An overall “Below Expectations” rating on Section 1 of the Clinical Clerkship Rotation Evaluation will be referred to the Instructor of Record/Department Chairperson for review and grade determination. Students who receive two or more Clinical Clerkship Rotation Evaluations with an overall “Below Expectations” rating will be referred to the COSE Clerkship Performance Subcommittee for review.

An overall “Below Expectations” rating on Section 2 of the Clinical Clerkship Rotation Evaluation will be referred to the Associate Dean/Student Services. In consultation with the Instructor of Record/Department Chairperson a determination of action will be reached.

IMPORTANT NOTE: The student will maintain an “Extended” (ET) grade until they have successfully completed all academic and clinical requirements for the course.
The following are standard MSUCOM policies across all Clerkship rotations.

**Attendance Policy**

Clerkship activities are mandatory and timely attendance is expected at all educational events.

In the event a student must be absent from clerkship activities, he/she must, firstly, have prior approval from the Graduate Medical Education office (DME/DIO, Clerkship Director, and/or Student Clerkship Coordinator per the rotation sites process/policy). The clinical preceptor must also approve the absence, and determine an acceptable make-up plan which may include, but is not limited to: additional time on rotation, additional presentation(s), or written assignment(s). In the event of an emergency, the student must contact the Graduate Medical Education office and clinical preceptor as soon as the situation allows. Any exception to this attendance policy for any given rotation will be noted in the course syllabus.

Abuse of this policy, as determined by the GME office or a clinical preceptor, may be documented in a student evaluation(s) and/or reported to the Associate Dean of Student Services at MSUCOM via the Student Incident Report Form: [http://com.msu.edu/Students/Registrar/Policies.htm](http://com.msu.edu/Students/Registrar/Policies.htm) or via phone call to the Associate Dean of Student Services (517-353-8799).

**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.

**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.

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).

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 turn the original in to the “Office of the Registrar” upon their return from the rotation. 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.
## Patient Types and Procedure Log

<table>
<thead>
<tr>
<th>Procedure</th>
<th>#Required</th>
<th>Pt. Initials</th>
<th>Date</th>
<th>Supervisor Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpret three EKG’s obtained in patient’s suffering from a toxicology problem</td>
<td>1. 2. 3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review the interpretation of an acetaminophen level Against the Rumack- Matthew nomogram in two patients</td>
<td>1. 2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participate in five toxicology consults or poison control calls.</td>
<td>1. 2. 3. 4. 5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss the Poison Control Center utility, rationale for existence and funding structure with the preceptor</td>
<td>Date: Preceptor Signature:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>