IM 666
Toxicology
Selective/Elective Clerkship Rotation Syllabus

Osteopathic Medical Specialties
Mary Hughes DO
Chairperson, Instructor of Record

Mary Hughes DO
hughesm@msu.edu (100% for CLIFMS effort)
Course Director

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For all questions regarding content or administrative aspects of this course, contact

Steven Stone
stonest@msu.edu
Department Course Coordinator

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. This rotation is most amenable to the two week, 3 credit hours format.

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.

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, in 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 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, 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.
6. Be able to use the eye signs to help differentiate the various stimulants, especially those causing hallucinations.


Objectives

1. Develop a list of common medications in which one pill could kill an inquisitive 2 year old.
2. Develop a poison control sheet to hand out to parents/grandparents discussing the risks of certain medications that fit into the one-pill can kill category

Reading list
Questions to ponder
PowerPoint slide presentation - found on D2L

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.
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.

<table>
<thead>
<tr>
<th>Rotation Clinical Requirements</th>
<th>Submission Method</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Evaluation of Rotation</td>
<td><em>the determination of a satisfactory attending evaluation is governed by the University’s Policy for Retention, Promotion, and Graduation</em></td>
<td>To be appropriately submitted per the instructions at the end of each evaluation form</td>
</tr>
<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>“Evaluate” Link in Kobiljak Schedule (this link will activate on the final Monday of the rotation)</td>
</tr>
<tr>
<td>Patient Types and Procedure Log</td>
<td>See page 11 at end of syllabus and upload into D2L dropbox for the course</td>
<td>See page 11 at end of syllabus and upload into D2L dropbox for the course</td>
</tr>
<tr>
<td>Clinical Shift Schedule/ and on-site curriculum if provided by site</td>
<td>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</td>
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</tbody>
</table>
IM 666 Toxicology Corrective Action Policy

Rotations beginning in July 2015 will have the following requirements:
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 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.

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 students a Pass or an N 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 “Remediation Policy” process.

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

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 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. While on rotations that may occur outside of the base hospital system notify your attending immediately of any exposure and follow the MSU procedure for evaluation and treatment. You can 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.</td>
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<td>2.</td>
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<td>3.</td>
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<tr>
<td>Review the interpretation of an acetaminophen level Against the Rumack-Matthew nomogram in two patients</td>
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<tr>
<td></td>
<td>2.</td>
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<tr>
<td>Participate in five toxicology consults or poison control calls.</td>
<td>1.</td>
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<td>2.</td>
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<td>4.</td>
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<td>5.</td>
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<tr>
<td>Discuss the Poison Control Center utility, rationale for existence and funding structure with the preceptor</td>
<td>Date:</td>
<td></td>
<td></td>
<td>Preceptor Signature:</td>
</tr>
</tbody>
</table>