

IM 665

EMERGENCY MEDICINE ADVANCED CLERKSHIP

CLERKSHIP ELECTIVE ROTATION SYLLABUS

OSTEOPATHIC MEDICAL SPECIALTIES
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At Michigan State University College of Osteopathic Medicine (MSUCOM), we are constantly working to improve our curriculum and to meet 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 rotation.

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INTRODUCTION AND OVERVIEW

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. This syllabus provides an overview of rotation goals and objectives designed to help you gain an understanding of the breadth and scope of Emergency Medicine Advanced.

Before you start to read the syllabus, please make a note of this important information below from Dr. Mary Hughes pertaining to the ER end-of-rotation exam (please see page 3 and 11 for more exam information):

Due to the vast knowledge and possibilities for learning in EM, the faculty for elective rotations has chosen the following format to further your education and allow you an advanced understanding of EM as a specialty. To that end, modules have been created for your learning enhancement.

These modules will all be placed online and during your second or subsequent EM rotation(s) you will need to complete different modules than the original CORE IM 657 rotation. Each elective EM rotation will have a different set of modules, so make sure you are logging into the correct D2L site. Each module will have around 12-item quizzes of which you must obtain 75% correct to successfully complete the module. There are four modules per elective rotation. Make sure you complete the proper one. The syllabus is very self-explanatory if you read it carefully paying particular attention to the elective # of EM that you are completing.

Regarding the logs: There are several procedures and patient types that are expected to be completed on patients while on this rotation. It is your duty to seek them out, and then log them. For example, let the nurses know that you need to start two IV's, and then, even if it is not your primary patient they will come and get you to complete this task, and then you can log it. These are mandatory to ensure your breadth of exposure. You do not have to be the primary provider on the patient to log them but do need to do the things requested to log the patient. Being proactive about these requirements will assure their completion but waiting until the last week to read the syllabus will almost assure that you will need to go back for additional shifts to meet the minimum requirements.

ELECTIVE COURSE SCHEDULING

Preapproval

- This course does not require preapproval from the IOR. The student should follow the directions below for elective course confirmation and enrollment.

Required Prerequisites

- This course requires the following prerequisite course(s):
 - This course requires that you must first take the CORE IM 657 Emergency Medicine Course.

Course Confirmation and Enrollment

- The student must be an active student at MSUCOM.

- Student must complete five core rotations prior to any elective rotation.
- It is the student's responsibility to provide the elective site/rotation acceptance material to the COM.Clerkship@msu.edu for MSU confirmation and scheduling.
 - MSUCOM clerkship confirmation is complete when the rotation is visible on the students Medtrics schedule.
- It is the student's responsibility to ensure enrollment prior to beginning any course/rotation.
 - Enrollment will be processed by the MSUCOM Registrar's Office upon clerkship confirmation.
 - Enrollment can be verified by the student by reviewing the Student Information System
- 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

To successfully complete this rotation, you must do **ALL** the following:

- A. Meet with the department where you will be rotating prior to the rotation and set your schedule, pick up your rotation book, obtain the conference schedule, and any other mandatory requirements as per the department.

Complete all assigned shifts. All EM Rotations are 4 weeks in length whether your core or elective; absences due to vacations, interviewing, or other such activities are not acceptable. **You may not work more than 5 shifts in a row or be scheduled for more than 4 consecutive days off in a row. Additionally, you may not work more than one shift in a 24-hour period. There must be shifts scheduled in each week of the four-week rotation. Conference lectures do not count as shifts worked. Because different hospitals have different lengths of shifts, the total number of shifts will vary by site, but may be no less than 14 of 28 days, excluding conference time.**

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.***

- B. **You will need to send in your electronic version of your shift schedule, please post it to the drop box in D2L by 11pm the last Sunday of the rotation.**
- C. You must complete and return the required Patient types and Procedure's checklist, and evaluations to the proper D2L course drop boxes for each EM Elective Rotation. All materials are to be posted in the D2L course site for IM 665 no later 11pm the last Sunday of the rotation.
- D. Log onto the D2L website for this course and complete four modules with their quizzes as described above. A 75% is needed to pass. All students who fail to complete four modules while on rotation will receive an "N" grade.

- E. Return all rotation books to the hospital emergency department office within one week of the end of the rotation.
- F. Attending all scheduled conferences as assigned.
- G. Complete any additional didactic work as required by your local emergency department and return to their office by their deadlines. **This MAY include an EMS option.**
- H. If illness precludes you from completing a shift, you must make it up.
- I. Vacation may not be scheduled during this rotation.
- J. Interviewing time must occur on days that you are scheduled off. Any missed shifts must be made up.
- K. Always maintain professional appearance and behavior. You must achieve a satisfactory level on the direct observation rating form. Ratings of unsatisfactory in any category will be reviewed with you by a member of the MSU/COM Emergency Medicine faculty with a specific plan for remediation to be decided on a case-by-case basis.
- L. All written work must be original and completed on an individual basis.
- M. Board exams may be scheduled during this time, but most students should be able to schedule their shifts around their board schedule. If not, please email Katie Gibson-Stofflet (katiegs@msu.edu) as soon as you are aware that there will be a problem ahead of the conflict so alternatives may be arranged.

All students who fail to take four module exams and achieve a 75% on each, complete patient logs of required/observed patient types and procedures and procedure logs by 11pm on the last Sunday of the rotation may receive an N grade. It is the duty of the student to assure their arrival, so therefore it is always a good idea to keep a copy of everything you send in. An N grade will result in a meeting with the Committee on Student Evaluation.

Although it is recognized that rotation evaluations are not under the complete control of the student, it is still the responsibility of the student to assure their timely completion. Any rotation evaluation not received by the end of the semester in which the rotation was completed will result in an NGR grade for the student. The evaluation must be completed and submitted within the two-week deadline and preferably sent in during that time period. Any student who does not complete 4 weeks of Emergency Medicine will receive an N grade unless excused. This is an elective 4-week rotation, and therefore, vacation and interviewing time may not be taken during this month if it compromises the total number of shifts you are required to complete.

GOALS AND OBJECTIVES

GOALS

1. Provide the student with more advanced knowledge of specific topics in emergency medicine.

2. Introduce the student to basic procedures relevant to the practice of emergency medicine.
3. Facilitate an understanding of the approach to acute care clinical problem solving.
4. Continue to promote the acquisition of basic skills for the diagnosis and management of common emergencies.
5. Encourage the continued development of the student's professional attitude and behavior.

OBJECTIVES

1. Learning objectives for the emergency medicine clerkship relate to the following areas: a) cognitive knowledge; b) psychomotor skills; c) problem solving; and d) professional development. By the end of the four-week emergency medicine elective clerkship, the student is expected to have achieved, at a minimum, the following objectives through reading, conference attendance, observation, discussion, and hands-on clinical experience.
2. 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.

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

REQUIRED STUDY RESOURCES

Desire 2 Learn (D2L): Please find online content for this course in D2L (<https://d2l.msu.edu/>). Once logged in with your MSU Net ID, your course will appear on the D2L landing page. If you do not see your course on the landing page, search for the course with the following criteria, and pin it to your homepage: **Emergency Medicine Advanced**

If you encounter any issues accessing this D2L course, please email the CA (on the title page of this syllabus). It is your responsibility to make sure you have access to the course D2L page on the first day of the course.

For the didactic portion from MSU/COM Department of Osteopathic Medical Specialties all readings and answers are to be referenced from the following sources, which should be available in every emergency department in which you rotate and are available through MSU Libraries Access Emergency Medicine or Access Medicine with your login.

Tintinalli's Emergency Medicine – A Comprehensive Study Guide, 9th edition, by Judith E. Tintinalli, M.D., et al.

<https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookID=2353>

Academic Emergency Medicine; The 3-Minute Emergency Medicine Medical Student Presentation: A Variation on a Theme. Davenport C., Honigman B., Druck J. 2008 Jul; 15(7):683-7
<https://onlinelibrary-wiley-com.proxy1.cl.msu.edu/doi/full/10.1111/j.1553-2712.2008.00145.x>

Available through MSU Libraries. On the website homepage select “Resources” then select “E-resources” Under “Find Electronic Journals” type in “Academic Emergency Medicine” then click “Search” select “From 1997 to Present”. Under “Find Issues” select “All issues” Select “2008” then select “Volume 15, Issue 7” Article is listed under heading “Special Contributions”.

ROTATION REQUIREMENTS

REQUIREMENT	SUBMISSION METHOD	DUE DATE Please refer to D2L for actual (month/day) due dates
Module Quizzes	Taken in D2L – grade must be 75% or higher on all four modules	11:59 pm Last day of the Rotation (normally a Sunday)
EM Shift Schedule	Online in D2L Drop Box	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.
Logs of required/observed patient types and procedures. Make sure to use the one for EM elective rotations.	Online in D2L Drop Box	11:59 pm Last day of the Rotation (normally a Sunday)
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

<p>Student Evaluation of Clerkship Rotation</p>	<p>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.</p>	<p>Last Day of Rotation</p>
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Create an account in Access Emergency Medicine if you have not done so yet and use for this rotation.

- Access EM directions
- On the MSU Libraries main page: *Quick Links*, click on *Electronic Resources*
- Under *E-resources*, click on *Texts and Links*
- Under *Texts and Links*, you can search for Access Emergency Medicine.
- Clicking on that will then take you to the MSU NetID login site and then you can get access.
- Other readings as per each module.

In addition, your hospital may require additional articles, videos, or other forms of information to be obtained and utilized by you to further answer didactic questions that they may assign. The chief of the emergency department at your hospital will be responsible for assigning a grade to their specific material.

WEEKLY READINGS/OBJECTIVES/ASSIGNMENTS

Elective #1 The following four modules are to be completed on your first IM 665 elective rotation, whenever that occurs.

IM 665: Elective #1: Module #1: Introduction to Ultrasound (NB)

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

1. Differentiate between B-mode and M-mode ultrasound modalities.
2. Identify the purposes of the FAST Exam.
3. Identify the 4 positions of the FAST exam.
4. Describe the appearance of free intraperitoneal fluid on an ultrasound image.
5. Identify sufficient ultrasound image findings that can exclude an ectopic pregnancy in a low risk, non-fertility treatment pregnant female presenting with abdominal pain and bleeding.
6. Identify ultrasound findings suggestive of an ectopic pregnancy.

Reading List:

- Hecht C, Manson W. Hecht C, Manson W Hecht, Corky, and William Manson. Chapter 3. Physics and Image Artifacts. In: Ma O, Mateer JR, Reardon RF, Joing SA. Ma O, Mateer J.R., Reardon R.F., Joing S.A. Eds. O. John Ma, et

al.ed.s. *Ma and Mateer's Emergency Ultrasound, 4e* New York, NY: McGraw-Hill; 2014.
<https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2966§ionid=249997612#1175890995> Accessed May 5, 2022.

- Ma O, Mateer JR, Kirkpatrick AW. Ma O, Mateer J.R., Kirkpatrick A.W. Ma, O. John, et al. Chapter 9. Trauma. In: Ma O, Mateer JR, Reardon RF, Joing SA. Ma O, Mateer J.R., Reardon R.F., Joing S.A. Eds. O. John Ma, et al.ed.s. *Ma and Mateer's Emergency Ultrasound, 4e* New York, NY: McGraw-Hill; 2014.
<https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2966§ionid=249992603> Accessed May 5, 2022.
- Reardon RF, Hess-Keenan J, Roline CE, Caroon LV, Joing SA. Reardon R.F., Hess-Keenan J, Roline C.E., Caroon L.V., Joing S.A. Reardon, Robert F., et al. Chapter 16. First Trimester Pregnancy. In: Ma O, Mateer JR, Reardon RF, Joing SA. Ma O, Mateer J.R., Reardon R.F., Joing S.A. Eds. O. John Ma, et al.ed.s. *Ma and Mateer's Emergency Ultrasound, 4e* New York, NY: McGraw-Hill; 2014.
<https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2966§ionid=249988928> Accessed May 5, 2022

Questions to Ponder:

Access Emergency Medicine: Ma and Master's Emergency Ultrasound. Chapter 5: Trauma:

Introduction-CASE STUDIES at the end of the Chapter

<https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2966§ionid=249992603#1175885742>

IM 665: Elective #1: Module #2: Toxicology: Introduction to the Poisoned Patient (MH)

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

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 doses, 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

Reading list - syllabus material provided in D2L.

PowerPoint slide presentation found on D2L.

IM 665: Elective #1: Module #3: Trauma: Introduction to the Traumatized Patient (MH)

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

1. Organize the evaluation of a trauma patient by primary survey, resuscitative phase, secondary survey and definitive care.
2. List the components of primary survey, resuscitative phase, secondary survey, and definitive care.
3. List the components of the AMPLE history.
4. Be able to identify the clinical scenario of tension pneumothorax, cardiac tamponade, sucking chest wound, and flail chest.
5. Be able to identify the clinical scenario of a patient likely to have a splenic or hepatic injury with blood loss.
6. Be able to recognize the patient who has hypovolemic shock.
7. Be able to identify the differences in presentations between adults, children, and the elderly as it relates to traumatic conditions.
8. Be able to identify the differences between the adult female who is pregnant in various trimesters from the non-pregnant adult female who suffers a traumatic injury.

Reading list:

- **Access Emergency Medicine:** Tintinalli's Emergency Medicine Manual, A Comprehensive Study Guide, 9th edition Judith E. Tintinalli, et. al. <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookID=2353>

Section 21: Trauma

- **Trauma in Adults**
- **Pulmonary Trauma**
- **Cardiac Trauma**
- **Abdominal Trauma**
- **Trauma in Children**
- **Trauma in the Elderly**
- **Trauma in Pregnancy**

Questions to ponder:

- Does blood pressure alone define hypovolemic shock in the patient with a traumatic injury?
- Be able to identify different activities that are appropriate to be conducted during the primary survey, resuscitative phase, secondary survey, and definitive care.
- Differentiate the typical presentations for pediatric and geriatric trauma patients and why they might be different from the typical adult patient.
- Why is it important to resuscitate the mother before the baby?
- What are the normal respiratory changes in pregnancy?
- Which procedures need to be performed differently in the pregnant patient?

IM 665: Elective #1: Module #4. Pediatrics: Approach to the Febrile Child (NB)

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

1. Define the neonatal period.
2. Define a fever in terms of temperature and method of obtaining.
3. Recognize hypothermia as a sign of sepsis in the neonatal period.
4. State the appropriate evaluation for a febrile neonate.
5. Identify characteristics that characterize febrile children >3mo old to have low risk for SBI
6. Explain the mechanisms humans use to maintain thermoregulation
7. Identify signs and symptoms that indicate toxicity in children
8. State the appropriate emergent management for children who are exhibiting signs or symptoms of toxicity
9. Identify risk factors in otherwise well appearing children that place them at risk for serious bacterial infection

Reading list:

- <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookid=2464>
- Fein DM, Avner JR. Fein D.M., Avner J.R. Fein, Daniel M., and Jeffrey R. Avner. The Febrile or Septic-Appearing Neonate. In: Tenenbein M, Macias CG, Sharieff GQ, Yamamoto LG, Schafermeyer R. Tenenbein M, Macias C.G., Sharieff G.Q., Yamamoto L.G., Schafermeyer R Eds. Milton Tenenbein, et al.eds. *Strange and Schafermeyer's Pediatric Emergency Medicine, 5e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2464§ionid=194747528> . Accessed May 5, 2022.
- Avner JR. Avner J.R. Avner, Jeffrey R. The Febrile- or Septic-Appearing Infant or Child. In: Tenenbein M, Macias CG, Sharieff GQ, Yamamoto LG, Schafermeyer R. Tenenbein M, Macias C.G., Sharieff G.Q., Yamamoto L.G., Schafermeyer R Eds. Milton Tenenbein, et al.eds. *Strange and Schafermeyer's Pediatric Emergency Medicine, 5e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2464§ionid=194747553> Accessed May 5, 2022

Questions to ponder:

- Access Emergency Medicine: Case Files: Emergency Medicine, 4e. Fever without a source in a 1–3-month-old infant. <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/CaseContent.aspx?qbosID=380855&qbosContainerID=154&viewByNumber=false#168613791>

Elective #2 The following four modules are to be completed on your second IM 665 Elective rotation, whenever that occurs.

IM 665: Elective #2: Module #1: Review of anticoagulant medications: Their indications, contraindications, and antidotes (NB)

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

1. Identify the location of action of warfarin, Xa Inhibitors, heparin, low molecular weight heparins, and fibrinolytics on the coagulation cascade.
2. Describe the mechanism of action of antiplatelet medications.
3. Determine the pharmaceutical management for a patient with an elevated INR in the presence and absence of bleeding.
4. Identify the indications for vitamin K, platelets, fresh frozen plasma, and Prothrombin complex concentrate (PCC).

Reading List:

- Cico S. Cico S Cico, Stephen John.Hemostasis. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=215042278> . Accessed May 5, 2022.
- Slattery DE, Pollack, Jr CV. Slattery D.E., Pollack, Jr C.V. Slattery, David E., and Charles V. Pollack, Jr. Thrombotics and Antithrombotics. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=221179142> Accessed May 5, 2022.

Questions to Ponder:

- For a more context-oriented overview: Sivilotti MA. Sivilotti M.A. Sivilotti, Marco L. A. Hematologic Principles. In: Nelson LS, Howland M, Lewin NA, Smith SW, Goldfrank LR, Hoffman RS. Nelson L.S., Howland M, Lewin N.A., Smith S.W., Goldfrank L.R., Hoffman R.S. Eds. Lewis S. Nelson, et al.eds. *Goldfrank's Toxicologic Emergencies, 11e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2569§ionid=210268769> . Accessed May 5, 2022.
- Chen BC, Su MK. Chen B.C., Su M.K. Chen, Betty C., and Mark K. Su. Antithrombotics. In: Nelson LS, Howland M, Lewin NA, Smith SW, Goldfrank LR, Hoffman RS. Nelson L.S., Howland M, Lewin N.A., Smith S.W., Goldfrank L.R., Hoffman R.S. Eds. Lewis S. Nelson, et al.eds. *Goldfrank's Toxicologic Emergencies, 11e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2569§ionid=210273520> . Accessed May 5, 2022.

IM 665: Elective #2: Module #2: Toxicology: Acetaminophen, aspirin, alcohols (MH)

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

1. State the different rates of absorption of various salicylate containing products, and sources of salicylate besides aspirin.
2. 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. 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. Recognize the stages of acetaminophen poisoning.
7. Understand the use and limitations of the Rumack - Matthew nomogram in acetaminophen poisoning.
8. List the metabolic pathways of acetaminophen poisoning.
9. Select appropriate therapy for a patient with an acetaminophen overdose.
10. 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.

Reading list:

- Cohen JP, Quan D. Cohen J.P., Quan D Cohen, Jennifer P., and Dan Quan. Alcohols. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220744565> Accessed May 5, 2022.
- Levitan R, LoVecchio F. Levitan R, LoVecchio F Levitan, Rachel, and Frank LoVecchio. Salicylates. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220744992> . Accessed May 5, 2022.
- Wightman RS, Nelson LS. Wightman R.S., Nelson L.S. Wightman, Rachel S., and Lewis S. Nelson. Acetaminophen. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220745053> . Accessed May 5, 2022.
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McGraw-Hill;

<http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2464§ionid=196391273> . Accessed May 5, 2022.

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- Mycyk MB. Mycyk M.B. Mycyk, Mark B. Toxic Alcohols. In: Sherman SC, Weber JM, Schindlbeck MA, Rahul G. P. Sherman S.C., Weber J.M., Schindlbeck M.A., Rahul G. P Eds. Scott C. Sherman, et al. eds. *Clinical Emergency Medicine, 1e* New York, NY: McGraw-Hill; 2014. <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=991§ionid=55139169> . Accessed May 5, 2022.
- Hebbard, Carleigh F., Mullins, Michael E. "10 Pitfalls of Salicylate Poisoning." ACEP Now. Vol 43, No03, March 2024. [10 Pitfalls of Salicylate Poisoning - ACEP Now](#)

Questions to ponder:

- Why does the nomogram not work for extended-release products or overdoses taken over a period of several hours for acetaminophen?
- Why do you need to alkalinize the urine on a patient with an aspirin overdose?
- Why do you need to do a complete physical exam on every intoxicated person, every time?
- What are household sources of methanol, ethylene glycol, and isopropyl alcohol?
- Not really an alcohol, but what compound is given off when methylene chloride (Chemical in paint stripper) is metabolized?

IM 665: Elective #2: Module #3: Pediatrics: Pediatric Rehydration and Calculation of Fluids and Electrolytes. (NB)

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

1. Identify the gold standard for determining and quantifying dehydration in children.
2. Differentiate between minimal, moderate, and severe dehydration in children.
3. Differentiate between patients that are suitable for oral rehydration therapy (ORT) vs patients suitable for IV hydration.
4. Calculate the volume of fluids required for fluid resuscitation in acutely dehydrated children based on body weight.
5. Identify the common additives to rehydration fluids.
6. Calculate weight-based administration of maintenance intravenous fluids using the 4-2-1 rule.
7. Describe the rationale for administration of glucose for dehydration due to gastroenteritis.
8. Determine which children need admission and which can be discharged safely after initial treatment for dehydration.

Reading List:

- Chan M, Enarson P. Chan M, Enarson P Chan, Melissa, and Paul Enarson." Fluid and Electrolyte Therapy in Infants and Children." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=211003069> . Accessed May 5, 2022.
- Access Emergency Medicine: Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9th ed. <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookID=2353>

Questions to Ponder:

- Should children less than age 18 be given a phenothiazine to stop their nausea and vomiting? These are commonly used medications in adults and come in suppository form. Why or why not?

IM 665: Elective #2: Module #4: Trauma: Mild Traumatic Brain Injury and Management: Concussion Management and PECARN head CT rules (MH)

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

1. Apply the PECARN head CT rules in children.
2. Define concussion.
3. List common sequelae of concussion.
4. Apply return to activity guidelines for patients recovering from a concussion.
5. Discuss the process of reading a head CT for trauma.
6. Know the components and classifications of the Glasgow Coma Scale.
7. Discuss the classification of head injury into mild, moderate, severe, primary, and secondary.
8. Know the relationship between mean arterial pressure, systolic and diastolic blood pressure, intracranial pressure and cerebral perfusion pressure.
9. Identify patterns of head injury based on clinical examination.

Reading list:

- Wright DW, Merck LH. Wright D.W., Merck L.H. Wright, David W., and Lisa H. Merck." Head Trauma." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=221181086>. Accessed May 5, 2022.

- Kuppermann N, Holmes JF, Dayan PS, Hoyle JD Jr, Atabaki SM, Holubkov R, Nadel FM, Monroe D, Stanley RM, Borgialli DA, Badawy MK, Schunk JE, Quayle KS, Mahajan P, Lichenstein R, Lillis KA, Tunik MG, Jacobs ES, Callahan JM, Gorelick MH, Glass TF, Lee LK, Bachman MC, Cooper A, Powell EC, Gerardi MJ, Melville KA, Muizelaar JP, Wisner DH, Zuppan SJ, Dean JM, Wootton-Gorges SL; Pediatric Emergency Care Applied Research Network (PECARN). **Identification of children at very low risk of clinically important brain injuries after head trauma: a prospective cohort study.** <https://pubmed.ncbi.nlm.nih.gov/19758692/> Lancet. 2009 Oct 3;374(9696):1160-70. Epub 2009 Sep 14. PubMed PMID: 19758692. PECARN **Head Injury Guidelines for CT** <https://www.proquest.com/docview/199050845?parentSessionId=v6MFRlarBBmh4QutiogGJyPAZq6QFp52Wxy1kHBARAa8%3D&pq-origsite=summon&accountid=12598>
- Tataris KL. Tataris K.L. Tataris, Katie L. "Head Injuries." In: Sherman SC, Weber JM, Schindlbeck MA, Rahul G. P. Sherman S.C., Weber J.M., Schindlbeck M.A., Rahul G. P Eds. Scott C. Sherman, et al.eds. *Clinical Emergency Medicine, 1e* New York, NY: McGraw-Hill; 2014 <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=991§ionid=55139205> . Accessed May 5, 2022.
- Chapter VI-3. **How to Read a Head CT in a Patient with Head Trauma.** In: Schwartz DT. Schwartz D.T. Ed. David T. Schwartz.eds. *Emergency Radiology: Case Studies* New York, NY: McGraw-Hill; 2008. <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=434§ionid=41825465> . Accessed May 5, 2022.
- **JAMA.** 2011 Jul 6;306(1):79-86. doi: 10.1001/jama.2011.819. Epub 2011 May 31. Harmon KG, Drezner JA, Gammons M, Guskiewicz KM, Halstead M, Herring SA, Kutcher JS, Pana A, Putukian M, Roberts WO. *Br J Sports Med.* 2013 Jan; 47(1):15-26. **Diagnosis and management of sports-related concussion: a 15-year-old athlete with a concussion.** <https://pubmed.ncbi.nlm.nih.gov/21632470/> American Medical Society for Sports Medicine position statement: concussion in sport.

Questions to ponder:

- Why does elevation of the head of the bed decrease ICP?
- What is the effect of maintaining the head in the midline versus turned to one side on ICP?
- Regarding clinical decision rules, understand that they never supersede the clinician at the bedside's exam and/or gestalt and are only guidelines.

Elective #3 The following four modules are to be completed on your third IM 665 Elective rotation, whenever that occurs.

Module #1: Metabolic Derangements: Diabetic Ketoacidosis, Hyperosmolar Non-ketotic coma, electrolyte disturbances including hyponatremia, hyponatremia, hyperkalemia, hypokalemia (NB)

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

1. Differentiate between DKA, HONK.
2. Compare venous and arterial pH testing in patients with DKA.
3. Discuss critical electrolyte abnormalities seen in both DKA and HONK.

- 4 Describe the purpose of Kussmaul breathing.
5. Define appropriate treatment of DKA once hyperglycemia has resolved.

Reading list:

- Nyce A, Byrne R, Lubkin CL, Chansky ME. Nyce A, Byrne R, Lubkin C.L., Chansky M.E. Nyce, Andrew, et al. "Diabetic Ketoacidosis." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=190079125> . Accessed May 5, 2022.

Questions to ponder:

- Access Emergency Medicine: Case Files: Emergency Medicine 4e. Case 5. <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/CaseContent.aspx?gbosID=380828&gbosContainerID=154&viewByNumber=false#168610900>

Module #2: Toxicology: CNS stimulants: cocaine, ecstasy, PCP, Crystal Meth, bath salts (MH)

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

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

Reading list:

- <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookID=2353#183421503>; Section 15 on Toxicology
- Tobias AZ. Tobias A.Z. Tobias, Adam Z. "Psychoses." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=190079424> . Accessed May 5, 2022.
- Shepherd SM. Shepherd S.M. Shepherd, Suzanne M. "Injection Drug Users." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H.

Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/book.aspx?bookid=2353&isMissingChapter=true>. Accessed May 5, 2022.

- Mutter M, Huff J. Mutter M, Huff J Mutter, M. Kathryn, and J. Stephen Huff. "Altered Mental Status and Coma." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=189594077>. Accessed May 5, 2022.
- Wilson M. Wilson M Wilson, Michael. "Acute Agitation." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=222326340>. Accessed May 5, 2022.
- Khatri U, Jang DH. Khatri U, Jang D.H. Khatri, Utsha, and David H. Jang. "Hallucinogens." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220744899>. Accessed May 5, 2022.
- Simonetto, Douglas A. et al. **Cannabinoid Hyperemesis: A Case Series of 98 Patients.** Mayo Clinic Proceedings, Volume 87, Issue 2 , 114 – 119 [https://www.mayoclinicproceedings.org/article/S0025-6196\(11\)00026-7/pdf](https://www.mayoclinicproceedings.org/article/S0025-6196(11)00026-7/pdf)
- Burnett, LB, Tarabar A, et al. "Cocaine Toxicity." <https://emedicine.medscape.com/article/813959-overview>
- Wightman RS, Perrone J. Wightman R.S., Perrone J Wightman, Rachel S., and Jeanmarie Perrone. "Cocaine and Amphetamines." In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220744818> . Accessed May 5, 2022.

Questions to ponder:

- Which class of antibiotics is known to cause hallucinations in the elderly?
- What one question can you ask that may get at the cause of intractable nausea

and vomiting being related to excess cannabinoid ingestion in any form?

- What is the responsibility of the clinician if a child presents with obvious exposure to drugs of abuse?

Module #3: Trauma: Environmental: Heat, Cold, Burns (MH)

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

1. Define trench foot, chilblains, hypothermia, and the stages of frostbite.
2. Discuss the management of trench foot, chilblains, hypothermia, and the stages of frostbite.
3. Discuss the common rhythm disturbances seen with hypothermia.
4. Recognize an Osborn J wave as a marker of hypothermia.
5. Calculate percent body surface area burned.
6. Calculate fluid requirements for the first 24 hours for a burn victim.
7. Differentiate prickly heat, heat exhaustion and heat stroke.
8. Understand the mechanisms by which the body dissipates excess heat.

Reading list:

- Paddock MT. Paddock M.T. Paddock, Michael T. Cold Injuries. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220746407>. Accessed May 5, 2022.
- Brown DA. Brown D.A. Brown, Douglas J.A. Hypothermia. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220746470>. Accessed May 5, 2022.
- LoVecchio F. LoVecchio F LoVecchio, Frank. Heat Emergencies. In: Tintinalli JE, Ma O, Yealy DM, Meckler GD, Stapczynski J, Cline DM, Thomas SH. Tintinalli J.E., Ma O, Yealy D.M., Meckler G.D., Stapczynski J, Cline D.M., Thomas S.H. Eds. Judith E. Tintinalli, et al.eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9e* New York, NY: McGraw-Hill; <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2353§ionid=220746545> Accessed May 5, 2022.
- Stehman CR. Stehman C.R. Stehman, Christine R. Cold-Induced Tissue Injuries. In: Sherman SC, Weber JM, Schindlbeck MA, Rahul G. P. Sherman S.C., Weber J.M., Schindlbeck M.A., Rahul G. P Eds. Scott C. Sherman, et al.eds. *Clinical Emergency Medicine, 1e* New York, NY: McGraw-Hill; 2014. <http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=991§ionid=55139177>. Accessed May 5, 2022.

- Mann J, Neuman J. Mann J, Neuman J Mann, Jessica, and J. Elizabeth Neuman. Hyperthermic Patient Management. In: Reichman EF. Reichman E.F. Ed. Eric F. Reichman.eds. *Reichman's Emergency Medicine Procedures*, 3e New York, NY: McGraw-Hill;
<http://accessemergencymedicine.mhmedical.com.proxy2.cl.msu.edu/content.aspx?bookid=2498§ionid=201303956>. Accessed May 5, 2022.
- Review MediaSite recording for dermatology on Heat and Cold Emergencies **MediaSite link found on D2L**
- Heat Related Illness Case on Access EM Cases: <https://accessemergencymedicine-mhmedical-com.proxy2.cl.msu.edu/CaseContent.aspx?qbosID=380875&qbosContainerID=154&viewByNumber=false#168616006>

Questions to ponder:

- Think about the medications patients are on and which may make it difficult to thermoregulate

Module #4. 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.

Complete and submit in D2L the completed table identifying at least 10 (more if possible) "One Pill Can Kill" toxins along with identifying the mechanism of action.

Student Name:		Date:
One Pill can Kill Table: Identify at least 10 (ten) toxins		
Toxin:	Mechanism of Action:	
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
16.		

PROCEDURE LOGS

In D2L under Course Requirements is the IM 665 Patient/Procedure Log to be completed during your rotation and uploaded into the corresponding drop box (It is also included as the last page of this syllabus). It is the hope that you have an opportunity to Observe/Perform/Interpret and Participate in the listed rotation specific procedures. We understand not all sites experience all the procedures listed. Please seek out and ask to be included where you can.

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.Clerkship@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

If a student does not successfully complete the rotation requirements of the course, the student will receive an NGR grade and be permitted to go through a 'corrective action' process.

The following assignments are eligible for corrective action and will be due no later than 14 days after the last day of the rotation at 11:59pm:

- Module Quizzes
- Patient Logs
- Shift Schedule

The steps of the "Corrective Action" process for IM 665 Emergency Medicine Elective are as follows:

1. The student will be required to submit answers to the objectives for modules in which they did not achieve a passing score to the course assistant, who will then forward them to the faculty for review, with comment back to student if needed for clarification of content.
2. The student will then be required to retake another quiz to demonstrate attainment of knowledge.
3. Should the quiz not be successfully completed a second time the faculty will review the content missed on both quizzes and provide individualized feedback as to where student needs to focus, and a third quiz attempt will then be allowed to demonstrate knowledge.

The student is responsible for contacting the Course Assistant (on the title page of this syllabus) if they believe missing assignments were reported in error, or if they are unclear about the corrective action process.

While it is the responsibility of the student to ensure that the Attending Evaluation of Clerkship Student is completed, this requirement may extend beyond the corrective action deadline.

If a student **successfully completes** the corrective action process, as determined by the IOR, the student will receive credit for the deficient academic grading requirement(s) and be eligible for a change in rotation grade (from NGR to Pass, pending the Attending Evaluation of Clerkship Student).

As determined by the IOR, the student will receive an N grade for the course if all assignments and the corrective action process are **not completed** successfully within 14 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

SPECIAL CONSIDERATIONS

1. Medicare Cases Per HCFA regulations, medical students may not perform the primary documentation on the chart of a patient with Medicare Insurance if the department wishes to obtain reimbursement for this care. Medical students may participate in the care of these patients but may not be the primary caregiver. There may be other special types of insurance that has the same rules in the area where you are performing your emergency department rotation, and you must follow the department rules regarding who you may and may not see.
2. Special Cases: Due to the delicate nature and legal issues, alleged criminal sexual conduct, assault and child abuse cases are not to be seen by students rotating in the emergency department. If during a patient encounter you suspect such is the case, notify the attending physician immediately and remove yourself from the care of this patient. Do not write on this patient's chart.
3. Attire: First impressions are very important. **You must wear a clean lab jacket and professional attire at all times. Name tags must be always worn, and above the waist.** Clean scrubs are generally acceptable, but **blue jeans are never acceptable.** Due to occupational safety and health administration regulations, socks must be always worn, even with sandals. No open toed sandals may be worn.
4. Sharps: After using suture trays, all sharps must be disposed of in the appropriate manner and the tray brought to the dirty utility room. This is a responsibility of the person performing the procedure and you must take care to remove all sharp instruments to avoid injury to your coworkers.
5. Keys to Good Care: See a limited number of patients and give them exceptional care. At all times know the status and results of all labs and x-rays. Constantly reassess your patients and update them of their status in the process. Your attending physician should be able to easily access information through you. In short, take full responsibility for all aspects of the patient's care.

During the 4 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.

Meeting or not meeting the above responsibilities will be used by the instructor of record in the determination of the final grade in the course.

LEARNING ACTIVITIES

Learning activities will vary among hospital emergency departments, however, certain activities should be completed in each emergency medicine clerkship. The following are examples of learning activities each student should accomplish when on an emergency medicine clerkship:

1. **READING:** See modules' individual lists.
2. **HISTORY AND PHYSICAL REVIEW:** An important portion of your learning will be in the evaluation of patients while obtaining historical data and performing physical examinations. For each patient, this information will be reviewed with an intern, resident, or attending physician.
3. **LECTURES:** Lectures on various topics are usually given at least once a week. They are intended to provide up-to-date information on clinical and research findings and techniques in various fields. They may be given by a guest speaker who is an expert on the topic. If your hospital has a mid-day or other regular lecture program, you are expected to attend.

IM 665 is the course number given to any general emergency medicine elective following your core IM 657 rotation, and therefore you must follow the directions carefully to be completing the correct items to receive your grade. Each subsequent rotation will have the same IM 665 course number, but the materials required to be completed for a passing grade will be different for each. You may not do more than three elective rotations in any one specialty.

Each week's material will have a quiz that you will take in D2L. A score of 75% is required to successfully complete the module. If you do not achieve a 75% you may request one time only to have the test reset. It would be recommended that you restudy the content before attempting the quiz a second time. If you do not complete successfully (75%) on the second attempt, then you must complete a two-page paper with references on a question given to you by the instructor of record. You will have 2 weeks to complete it and submit it to the instructor of record for review. Each quiz has a question bank associated with it so you will receive similar but not identical questions on each quiz as they are randomly generated by the computer.

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 necessary for successful program completion. This policy will define the policy and procedures regarding absences for clerkship activities. [Clerkship-Absence-Policy.pdf \(msu.edu\)](#)

POLICY FOR MEDICAL STUDENT SUPERVISION

The MSUCOM curriculum includes required clinical experiences in a variety of clinical learning environments. The Medical Student Supervision Policy outlines all supervision agreements and expectations. [Clerkship Medical Student Supervision Policy.pdf](#)

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. <https://osteopathicmedicine.msu.edu/current-students/student-handbook>.

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.

<https://osteopathicmedicine.msu.edu/about-us/common-ground-professionalism-initiative>

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

MSU email is the official communication from faculty and staff to students and students are responsible for checking it daily and maintaining their MSU email accounts 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 DO 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. <https://osteopathicmedicine.msu.edu/current-students/student-handbook>.

DUTY HOURS AND FATIGUE MITIGATION

The accreditation standards for graduate medical education programs include restrictions on the duty hours of residents. Additionally, institutions are expected to promote a clinical learning environment in which duty hours are monitored and strategies exist to mitigate the effects of fatigue. [Clerkship Duty Hours and Fatigue Mitigation Policy.pdf](#)

STUDENT EXPOSURE PROCEDURE

A protocol 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 here:

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

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

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 ACCOMMODATION LETTERS

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 an Accommodation Letter. Students must present their letter 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 letter 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
Module Quizzes	Taken in D2L	75% or higher on all four of the modules. Submitted by the 11:59pm Last Day of the Rotation (Usually a Sunday)	Will be the conditional grade until all requirements of this rotation are met	Failure to complete 100% and upload by 14 days after the last day of the rotation at 11:59 pm.
EM Shift Schedule	Online D2L Drop Box (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)	Submitted by the 11:59pm Last Day of the Rotation (Usually a Sunday)		Failure to complete 100% and upload by 14 days after the last day of the rotation at 11:59 pm.
Logs of required/observed patient types and procedures. Make sure to use the one for EM Elective rotations	Online D2L Drop Box See page 31 of syllabus	Submitted by the 11:59pm Last Day of the Rotation (Usually a Sunday)		Failure to complete 100% and upload by 14 days after the last day of the rotation at 11:59 pm.
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

PATIENT TYPES AND PROCEDURE LOGS

Student Name _____ Student ID # _____

	#Required	Pt. Initials	Date	Supervisor Initials
Toxicology (alcohol is a toxin)	1. 2.			
Major trauma	1. 2.			
EKG	1. 2. 3. 4. 5.			
Head CT	1. 2. 3. 4. 5.			
Geriatric Pt. (age >65)	1. 2. 3. 4. 5.			
Pelvic exam	1. 2.			
FAST exam w/ultrasound	1. 2.			
Laceration repair	1. 2.			
Structural exam (musculoskeletal)	1. 2.			
Chest x-ray	1. 2. 3. 4. 5.			
Pediatric evaluation (Age <8)	1. 2.			
Abdominal CT scan interpretation	1. 2.			
Local anesthesia for laceration repair	1. 2.			
IV's	1. 2. 3. 4.			
Draw ABG	1.			
Evaluate pt. with COPD or CHF	1.			