



Critical Care Selective Syllabus **Academic Year 2023-2024**

Table of Contents

Section A – Critical Care Selective Curriculum	2
Critical Care Selective Information.....	2
Selective Contacts	2
Course Description	2
Clinical Sites.....	2
Selective Learning Objectives.....	2
Critical Care Selective Requirements	4
Required Clinical Experiences: Procedures and Diagnosis Log (Px/Dx) (if applicable)	4
Required/Suggested Reading and Resources	7
Didactic/Interactive Learning/Simulations Sessions (schedule)	8
Observable Learning Activities/Other Requirements	10
Critical Care Selective Specific Assessment Process	11
Mid-Selective Formative Assessment	11
Summative Clinical Assessment	11
Calculating the Final Grade	12
Additional Selective Information	12
Selective Requirements	12
Helpful Tips	12
Simulation Appendix: Simulation Objectives	13
Section B – Selective Policy and Resources	15
General Information.....	15
Professionalism Resource	15
Educational Program Objectives.....	15
Attendance Requirements	16
Assessment Process	17
Deadline Compliance	19
Additional Resources.....	20
Rural Health Professions Program	20
Urgent/Emergent Health Care Services	20
Expectations for Mobile Communication	21
Accessibility and Accommodations.....	21
one45: Curriculum Management System	21
OASIS: Course Schedule	21
myTipReport Formative Assessment Application (Only Applicable to Critical Care).....	22



Section A – Critical Care Selective Curriculum

Critical Care Selective Information

Prerequisites: Students must successfully pass all pre-selective curricular elements to progress to the fourth year. Link to policy: [Enrollment, Sequencing and Grading for Pre-Clerkships Policy](#)

Credit Hours: 4

Course Code: 847

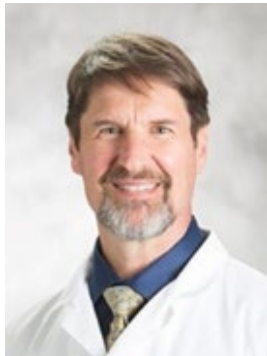
Selective Length: 4 weeks

Selective Website: [Critical Care](#)

Selective Resources: [OASIS](#), [SCCM Modules](#), [one45](#), [myTIPreport](#)

Selective Contacts

Selective Director: Robert Raschke, MD



Email: rraschke@arizona.edu

Office Location: HSEB B-578

Course Description

The Critical Care Selective utilizes a variety of well-supervised clinical settings exposing students to a broad array of patients as well as organized interactive learning experiences and directed readings allowing motivated students to establish a solid foundation of skills and knowledge for their future career choices.

Clinical Sites

For a list and description of the Critical Care Selective sites, please see the following site: [Elective Catalog](#)

Selective Learning Objectives

Each Critical Care Selective objective listed below has been mapped with relevant competencies, i.e., patient care, medical knowledge, clinical appraisal and quality improvement, interpersonal and communication skills, professionalism and societal awareness and responsiveness and is available within one45.

1. Work effectively in a team with physicians, nurses and other healthcare professionals to optimize survival and minimize patient suffering in the ICU.



2. Perform a complete pertinent history and physical exam on the critically ill patient, synthesizing clinical data to provide a reasonable assessment and treatment plan.
3. Present a service of critically ill patients effectively at rounds, interpreting clinical data in the context of the patient's illness and demonstrating an understanding of the most important priorities for the patient's survival.
4. Recognize a patient requiring emergent care and initiate appropriate evaluation and management.
5. Demonstrate ability to prevent common complications of critical care including iatrogenic infections, ventilator complications, adverse drug events, and delirium.
6. Use a basic knowledge of shock to guide resuscitation of a critically-ill patient. This includes knowledge of how clinical tests can assist in the classification of shock, determination of the adequacy of oxygen delivery and choice of resuscitative measures.
7. Treat a life-threatening infection using a time-sensitive sepsis bundle and appropriate source control measures.
8. Order simple mechanical ventilator settings appropriately including continuous positive airway pressure, volume control and pressure support. Know when to use low-tidal volume ventilation and know when the patient is ready for extubation.
9. Order drugs effectively and safely in the ICU taking into account the increased risk for adverse drug effects in critically-ill patients.
10. Demonstrate knowledge of when a patient should be transfused with blood products in urgent and non-urgent situations with adequate knowledge of transfusion complications to assist a patient in informed consent.
11. Demonstrate application of principles of cerebral resuscitation in the care of a patient with postoperative intracranial hypertension.
12. Demonstrate empathy for ICU patients by understanding their particular vulnerability and aspects of suffering inherent in their experience in the ICU.
13. Develop rapport with a patient's family with consideration of their cultural and spiritual needs adequate to facilitate a difficult discussion such as required to determine code status or withdraw life support.
14. Apply ethical principles in end-of-life decisions including: autonomy of the compromised patient, appropriate surrogacy, determination of futility, and the doctor's rights in relation to non-maleficence.
15. Critically appraise a journal article regarding the efficacy of an ICU therapy. Develop an appreciation of the level of evidence for common ICU practices to inform clinical decision-making.
16. Present a topic in critical care medicine incorporating a patient case history and entailing an effective review and critical appraisal of the literature.
17. Recognize the upstream social determinants of critical illness.
18. Identify the signs of burnout in yourself or a colleague and enlist appropriate assistance.
19. Be able to apply methods of improving your happiness and personal reliance.
20. To provide inclusive, excellent care to each individual patient, with respect for and without discrimination against patients with diverse race, nationality, culture, religion, socio-economic status, and personal choices (see [OEDI definition for Inclusive Excellence](#)).



Critical Care Selective Requirements

Required Clinical Experiences: Procedures and Diagnosis Log (Px/Dx) (if applicable)

Below is a list of procedures and diagnoses commonly encountered on the Critical Care Selective as well as an associated theme to reflect upon. These procedures and diagnosis must be completed during the selective.

Required Procedures	Clinical Setting	Level of Responsibility	Alternative Experience	Associated Theme
ABG Interpretation	Inpatient	Observe and Discuss	ABG Interpretation	Evidence-Based Medicine
Arterial line placement	Inpatient	Observe and Discuss	NEJM Videos in Clinical Medicine - Arterial Line Placement	Evidence-Based Medicine
Assessment of coagulopathy	Inpatient	Observe and Discuss	Hemostasis	Evidence-Based Medicine
Central venous line placement	Inpatient	Observe and Discuss	NEJM Videos in Clinical Medicine - Central Venous Access	Evidence-Based Medicine
Chest x-ray interpretation	Inpatient	Observe and Discuss	Complete tutorial: Here	Evidence-Based Medicine
ECG interpretation	Inpatient	Observe and Discuss	Complete tutorial: Here	Evidence-Based Medicine
Endotracheal intubation	Inpatient	Observe and Discuss	NEJM Videos in Clinical Medicine - Endotracheal Intubation	Evidence-Based Medicine
Management of arrhythmias	Inpatient	Observe and Discuss	Watch video: Here	Evidence-Based Medicine
Management of elevated intracranial pressure	Inpatient	Observe and Discuss	Participate in the neurological ICU simulation	Evidence-Based Medicine
Management of mechanical ventilation	Inpatient	Observe and Discuss	Clinical cases in mechanical ventilation online	Evidence-Based Medicine
Obtain informed consent	Inpatient	Observe and Discuss	UpToDate: Informed Consent	Behavioral and Social Sciences
Thoracentesis/Thoracostomy	Inpatient	Observe and Discuss	NEJM Videos in Clinical Medicine - Thoracentesis	Evidence-Based Medicine
Transfusion of blood products	Inpatient	Observe and Discuss	Participate in the transfusion simulation.	Evidence-Based Medicine



Required Diagnosis	Clinical Setting	Level of Responsibility	Alternative Experience	Associated Theme
Acute kidney injury	Inpatient	Observe and Discuss	Acute kidney injury	Evidence-Based Medicine
Delirium	Inpatient	Observe and Discuss	Read "Delirium and acute confusional states: Prevention, treatment, and prognosis" in UTDOL	Evidence-Based Medicine
Electrolyte derangements	Inpatient	Observe and Discuss	Review ILM by Dr. Brigham Willis (posted to course website)	Evidence-Based Medicine
End-of-life planning	Inpatient	Observe and Discuss	Participate in the ethics discussion session	Ethics
Ethical dilemmas in the ICU	Inpatient	Observe and Discuss	Participate in the ethics discussion session	Ethics
Good communication and professional rapport with a patient/family of a different cultural background than your own	Inpatient	Observe and Discuss	Participate in the family communication simulation	Behavioral and Social Sciences
Nursing care of ICU patients	Inpatient	Observe and Discuss	N/A, students are required to have a significant interaction with the nurses during a nursing-day or another equivalent experience	Interpersonal Education
Prevention of healthcare associated infection	Inpatient	Observe and Discuss	Read: "Infections and antimicrobial resistance in the intensive care unit: Epidemiology and prevention" in Up-to-Date online	Public Health, Prevention and Health Promotion
Don and duff personal protective equipment properly before entering the room of a patient with COVID19 infection	Inpatient	Observe and Discuss	Participate in the septic shock and MSOF simulations	Public Health, Prevention and Health Promotion
Respiratory failure	Inpatient	Observe and Discuss	Respiratory Failure (watch all parts of the video)	Evidence-Based Medicine
Sepsis	Inpatient	Observe and Discuss	Participate in the septic shock simulation.	Evidence-Based Medicine
Shock	Inpatient	Observe and Discuss	Participate in the case-based learning session on shock, and the simulation on septic shock.	Evidence-Based Medicine
Social determinants of health (upstream causes of critical illness)	Inpatient	Observe and Discuss	Watch video: Surgeon General addresses the AMA	Health Equity



Critical Care Selective Px/Dx Alternative Experiences

Students are expected to meet the required clinical experiences and procedures listed in the Px/Dx table above. If the student does not encounter all the required clinical experiences as listed within the procedures and diagnoses table above, completed by the end of the Critical Care Selective, the student will remedy the deficiency by completing the alternative experience utilizing the process below:

1. The student is responsible for monitoring their Px/Dx log and communicating their progress and learning goals with supervising faculty throughout each clerkship. This will allow for proactive attainment of these required encounters. If an alternative experience is needed for a procedure or diagnosis, the student must notify the selective director or designee a minimum of seven (7) days prior to the end of the selective.
2. The critical care selective director will assign an alternative experience/requirement to be completed.
3. Once the alternative experience/requirement is completed, it will be logged in OASIS by selecting the type of *Patient Encounter* in the drop-down menu.

Please see Section B for information related to Px/Dx Compliance.

Attendance Requirements

All Critical Care Selective experiences are mandatory, and any absence must be recorded via the absence tracking system. To submit an absence request please use [Formsite](#). Excused absences will be remediated as deemed appropriate by the selective director. Please see Section B for the University of Arizona College of Medicine - Phoenix (COM-P) attendance policies.

Students are generally required to work 20 shifts per 4-week rotation. A shift is defined as a normal workday on the clinical service on which a student is rotating, with a minimum of 8 (eight) hours and a maximum of 24 hours (as long as [Duty Hours Policy](#) is followed). Orientation and the academic half-days on the first Thursday also count as a whole shift. On subsequent academic half-days, a shift would consist of morning clinical duties plus the afternoon academic half-day. It is the student's responsibility to make up any clinical shifts they may miss (for instance, on account of interviews) and to notify the Program Coordinator immediately if their schedule will not allow them to complete the required minimum of 20 shifts. Remember that clinical duty hours, orientation, and academic half-days are combined when determining overall duty hours, which cannot exceed an average of 80 hours per week. Contact the Critical Care Director immediately if compliance with this requirement is in jeopardy.



Orientation and academic half-days: attendance is mandatory unless the student has been excused after discussing with the Critical Care Director or Program Coordinator a minimum of 48 hours ahead of time. Absences from orientation or academic half-days must be made up. Contact the Program Coordinator for make-up information.

- *Orientation: First Thursday of rotation, 8:00a.m.-12:00p.m.*
- *Academic half-day: All Thursdays of the rotation, 1:00p.m.-5:00p.m.*

Some sites require overnight call, but in-house call should not exceed 24 hours, plus 4 (four) hours for handoff of patient care.

Required/Suggested Reading and Resources

Required:

1. *SCCM Online Modules*

Virtual critical care rounds are provided through the Society for Critical Care Medicine (SCCM) website. Students are expected to complete all modules in either the VCCR Adult I or VCCR Pediatric II series based on the critical care rotation they are in. Each student will be provided with a login and password for both series. The ICU orientation (found in the VCCR adult series) should be completed prior to the rotation by all students.

- **Adult Modules: Complete all 20 plus the double starred (**)** module Peds TBI.
 1. Virtual Critical Care Rounds I Pre-Test
 2. Advanced Cardiovascular Life Support (ACLS) and the Rapid Response Team (RRT)
 3. Airway Assessment and Management
 4. Antibiotics in the ICU
 5. Arrhythmias
 6. Basic Mechanical Ventilation #1 **
 7. Burns Management
 8. Critical Care Aspects of Hepatic Failure
 9. Critical Care for Older Adults
 10. Electrolytes
 11. Healthcare-associated Infectious Diseases
 12. ICU Orientation**
 13. Medical Errors
 14. Organ Donation
 15. Palliative Care in the ICU**
 16. Pharmacology and Pharmacokinetics**
 17. Shock
 18. Transfusion Medicine in the ICU**
 19. Trauma Script
 20. Virtual Critical Care Rounds I Post-Test
- **Pediatric Modules: Complete all 15 plus the 5-double starred (**)** modules in Adult Modules.
 1. Virtual Critical Care Rounds Pediatric II Pre-Test
 2. Cardiovascular Medications



3. Arrhythmias
 4. Shock: Assessment and Therapy
 5. Sickle Cell Disease
 6. Acute Liver Failure
 7. Diabetic Ketoacidosis
 8. Status Epilepticus in Pediatrics
 9. Traumatic Brain Injury**
 10. Acute Kidney Injury in Children
 11. Pediatric Acute Respiratory Distress Syndrome
 12. Acute Severe Asthma
 13. Toxicology
 14. Oncologic Emergencies in the Pediatric Intensive Care Unit
 15. Virtual Critical Care Rounds Pediatric II Post-Test
2. [NEJM resident 360° section on mechanical ventilation](#)
 3. *NEJM procedural videos:*
 - [US guided internal jugular vein cannulation](#)
 - [Endotracheal intubation](#)
 4. *Users guides to the medical literature - Journal of the American Medical Association (JAMA) provided*

Suggested:

1. Killu, KE (2017). *Fundamental Critical Care Support* (6th ed.). Society of Critical Care Medicine. (ISBN-13: 978-1620750469)
2. Marini, J.J. and Dries D.J. (2019). *Critical Care Medicine: The Essentials and More* (4th ed.). Philadelphia, PA: Lippincott Williams & Wilkins. (ISBN-13: 978-1496302915)
3. Fuhrman, B and Zimmerman, J. (2017). *Pediatric Critical Care* (5th ed.). Philadelphia, PA: Elsevier Saunders. (ISBN-13: 978-0323383090)
4. Fanaroff A.A. and Klaus M.H. (2020) *Care of the High Risk Neonate* (7th ed.). Philadelphia, PA: Elsevier Saunders. (ISBN-13: 978-0323608541)

Didactic/Interactive Learning/Simulations Sessions (schedule)

[See appendix for selected simulation objectives]

Week 1 (In Simulation Center)

- [Introduction to Critical Care Medicine](#) (Case-based discussion): goals of ICU care, vulnerability/suffering of the ICU patient and family, ICU complications, family communication, teamwork and burn-out.
- [ICU Pharmacology](#) (Case-based discussion): clinical use of sedation drugs, vasopressors, and antibiotics; Life-threatening adverse drug events.
- [Mechanical Ventilation](#) (on campus, hands-on workshop): how a ventilator works, terminology describing ventilator modes, evidence-base related to the selection of ventilator modes). This session utilizes an online ventilator simulator. [PREPARATORY ASSIGNMENT: Students should view the “NEJM Resident 360° section on mechanical ventilation”]



- [Mechanical Ventilation](#)
- [ICU Procedures](#) (on campus, hands-on instruction): bag-masking, endotracheal intubation, US-guided R IJ central venous line insertion. [PREPARATORY ASSIGNMENT: Students should view the NEJM videos on US-guided central line placement and intubation]
- [Intubation](#)
- [Central Line Placement](#)
- [Septic Shock](#) (on campus simulation): COVID-19 infection control procedures, definition of septic shock, clinical determination of the cause of shock using point of care ultrasound and other methods, antibiotic selection and administration, sepsis bundle, source control, oxygen delivery devices, indications for mechanical ventilation.
- [Multi-system Organ Failure](#) (on campus simulation): Management of ARDS, acute renal failure, and delirium, management of a pulseless electrical activity code arrest, iatrogenic complications of ICU drugs and other interventions.
- [Intracranial Hypertension](#) (on campus simulation): cerebral perfusion pressure and cerebral autoregulation, intracranial pseudo-compliance, ventriculostomy, causes of acute intracranial hypertension, treatment of intracranial hypertension), definition and treatment of status epilepticus.

Week 2 (In Simulation Center)

- [Medical Ethics](#) (Case-based discussion): autonomy of the compromised patient, futility, surrogacy, the doctor's right to refuse to provide non-beneficial treatments, honoring cultural values, discrimination in the medical profession). [PREPARATORY ASSIGNMENT: Students should complete a reflective writing assignment and turn it in to CC program coordinator by the end of Week Two of the rotation (Sunday at 11:59pm). This should be at least one side of one page and should describe an event that occurred during the month that affected the student emotionally – whether it made them angry, happy, frustrated, guilty – it's up to the student. Students should pick an event they are willing to discuss during the session.]
- [Family Care and Communication in the ICU](#) (on campus simulation): DNR discussion, withdrawal of support, cultural aspects of rapport and communication, spiritual care, ethical consideration of surrogate end-of-life decisions, futility, patient suffering, communication, compassion, and empathy.
- [Life-threatening Hemorrhage](#) (on campus simulation): basic principles of treating life-threatening medical and surgical hemorrhage, when to give hemostatic agents, platelets and FFP, role of hemoglobin in oxygen delivery, when to use the massive transfusion protocol).

Week 3 (Virtual)

- [Shock Resuscitation](#) (case-based discussion): types of shock, oxygen delivery /consumption, lactic acidosis, fluid resuscitation, vasopressors, inotropes.
- [On-call Emergencies](#) (virtual simulation): individual medical students will deal with a series of bedside emergencies including neonatal, chest pain, seizure, stroke, transfusion reaction, and arrhythmia.
- [Critical Appraisal of Literature in the ICU](#) (Students present articles they were assigned - Group discussion). Understand the level of evidence for common ICU practices and how to use the



JAMA User's Guides to the Medical Literature. [PREPARATORY ASSIGNMENT: Students will work in teams before the session critically appraising and integrating the articles they are assigned to answer specific questions. Team assignments, articles, questions and the "User's guides to the medical literature" will be provided to the students prior to the session]

- Personal Resilience in the ICU (Case-based discussion): personal and environmental factors associated with burn-out, complications of burn-out, developing personal resilience. [PREPARATORY ASSIGNMENT: Students should complete and score the Maslach burnout inventory (which will be provided by email) and have it with them during the discussion and read the provided article].

Week 4 (Virtual)

- Clinical Topic Presentations by students. [PREPARATORY ASSIGNMENT: Prepare a PowerPoint case-presentation. This will be discussed during orientation and an example will be shared. The presentation should be based on a patient that the student took care of during the month. It should be about 15 minutes long, approximately 20 PowerPoint slides. It should describe the presentation, treatment and course of the patient, then focus on teaching important aspects of diagnosis, treatment or other aspects of the case that the student thought were the most important teaching points. Students are encouraged to make their presentations interactive and interesting – with an aim of teaching a short list of take-home points in such a way that the audience of other students will remember]
- Feedback on the rotation

Observable Learning Activities/Other Requirements

Non-Clinical Score (104 points)

The selective grading calculator is posted in one45 for assistance calculating the final grade.

Activity	Potential Value
Small Group Sessions - If assessment is satisfactory (all responses are "yes" or "not applicable" on the small group facilitator form) 4 points are earned for each of 14 sessions.	56 points
Online modules - through Virtual Critical Care Rounds (21 Adult or 20 Pediatric modules)	100% completion: 23 points 80%-99% completion: 15 points <80% completion: 0 points
Final Presentation (see grading rubric below)	25 points

Final Presentation Grading Rubric

Categories	Standard	Points
Content	Interesting topic covered in appropriate depth, evidence-based.	0-5
Organization	Structure and timing of the talk is logical and easy to follow.	0-5
Patient case	Concise but including all pertinent features, clear that the student understands the care the patient received.	0-5
Presentation	No technical glitches due to lack of preparation. Slides are simple and clear. Speaker interacts with the audience and keeps them interested.	0-5
Questions	Mastery of topic and clinical case is apparent.	0-5



Critical Care Selective Specific Assessment Process

Mid-Selective Formative Assessment

Assessment is the mechanism used to measure progress in learning over a given time period. A mid-rotation formative assessment with feedback is strongly suggested for every student. Student progress, achievements, strengths, weaknesses, and areas for improvement should be discussed. If at any point during the elective the student is at risk of not meeting expectations in one or more of the Educational Program Objectives (EPOs), in-person formative feedback with written documentation is *required*. Any significant deficiencies or concern should be communicated to the course director and selective director with written documentation that the feedback has been provided to the student. If deficiencies are noted late in the elective, timely feedback will be given. Students may be offered additional assignments to address weaknesses as approved by the course director and selective director. The student affairs office will be notified of any deficiencies or failures.

Additionally, throughout the selective, faculty and residents engaged in student teaching and supervision will provide formative feedback in a variety of formats (e.g. review of progress notes, H&P, direct observation forms, informal verbal feedback and written narratives, etc.) that may be communicated in writing or verbally. The purpose of this feedback is to identify strengths and opportunities for improvement.

Summative Clinical Assessment

Significant interaction on Critical Care Selective is defined as working together on the clinical service for at least 5 (five) days. Attending physicians who have their faculty title can complete an end of rotation assessment form. In the instance that only one end-of-rotation assessment is submitted, it will be a collaborative assessment from the preceptors who had significant interaction with the student, including residents. When only a single faculty member has been assigned to work with a student, this faculty member must provide the assessment for the student. The selective end of rotation (EOR) assessment form is distributed through one45. The EOR assessment contains EPOs relevant to critical care.

Students are graded on four evaluation criteria for these EPOs:

- Does not meet expectations
- Almost meets expectations
- Meets expectations
- Exceeds expectations

The grading is four tiers: Honors/High Pass/Pass/Fail/Incomplete.



Calculating the Final Grade

Final grade determinations will be made using the table below.

CLINICAL GRADE	NON-CLINICAL GRADE	FINAL GRADE
Honors	Pass	Honors
High Pass	Pass	High Pass
Pass	Pass	Pass
Honors or High Pass or Pass	Fail	Fail
Fail	Pass or Fail	Fail

The student fails the selective if any of the following occur:

1. The clinical and/or non-clinical grade is Fail
2. Receive a final “does not meet” on two or more different EPOs*
3. Achievement of a score of less than 70 % from the “non-clinical” / required activities

*For the purpose of assessment in the clinical years, an individual EPO rating of “Almost Meets Expectations” (previously a “level 1.5”) will not trigger the ramifications or follow up of a “Does Not Meet Expectations” rating be considered (previously a “level 1”) as defined in the [Competency Assessment Policy](#).

Additional Selective Information

Selective Requirements

1. Completion of assigned site, faculty and end of the selective evaluations (see the [Assessment and Evaluation of Students, Faculty and Curriculum Policy](#)).
2. Online SCCM Modules
3. Reflective writing assignment
4. Participation in all on-campus sessions, or completion of approved make-up activities
5. Final Presentation

Helpful Tips

- The best way to learn ICU is by seeing things happen in the ICU. Spend as much time as you can in the unit and volunteer to see as many patients, do as many procedures, talk to as many families as you can. The more you do, the more you will learn. If nothing is going on in the ICU, stay there to do your reading – you never know – the code bells could go off 5 (five) minutes later, giving you an opportunity to participate.
- Keep up with the selective assignments; do not leave them all for the end.
- Working well with nurses is an essential skill in the ICU. Nursing day is a recommended experience. Ask your site director to arrange for you to spend a day with an experienced nurse in the ICU and get an idea what the nurses do – you might learn how to hang meds, operate intravenous infusion pumps, place a foley, place a feeding tube, and many other useful skills that will help you appreciate and work well together with nurses.



Simulation Appendix: Simulation Objectives

Mechanical Ventilation Demonstration

- Understand how a ventilator triggers and cycles (starts and stops inspiration).
- Understand the difference between volume control and pressure control.
- Be able to rationally change ventilator settings in response to hypoxia and hypercarbia.
- Operationally define/recognize ARDS.
- Be able to order low tidal volume/low plateau pressure ventilator settings for a patient with ARDS.
- Be able to avoid auto-peep in a patient with asthma requiring mechanical ventilation.

Septic Shock (due to COVID-19) Simulation

- Don/duff COVID-19 personal protective equipment effectively.
- Operationally define/recognize sepsis and septic shock.
- Determine the cause of shock using history, physical examination, and point of care ultrasound.
- Order the six elements of the sepsis bundle.
- Properly order oxygen delivery devices.
- Recognize a patient that requires mechanical ventilation.

Multi-system Organ Failure (due to COVID-19) Simulation

- Recognize ARDS and provide low tidal volume, limited plateau pressure mechanical ventilation.
- Recognize and manage forms of ventilator-associated barotrauma.
- Recognize and manage life-threatening complications of acute renal failure.
- Resuscitate a patient in PEA arrest.
- Use point-of-care ultrasonography in the ICU to identify treatable causes of shock.
- Recognize adverse neurological and hemodynamic effects of drug therapy in the ICU.
- Take personal responsibility for end-of-life decisions regarding your patients.

Neurocritical Care Simulation

- Recognize and treat status epilepticus.
- Apply understanding of cerebral perfusion pressure, the principle of Monro-Kellie, intra-cranial pseudo-compliance and cerebral autoregulation to clinical management.
- Position a patient's head/torso appropriately to measure intracranial pressure using an extradural ventricular device.
- Apply five therapies to ameliorate acute intracranial hypertension.



Family Communication Simulation

- Be able to identify the legal surrogate decision-maker for a patient who cannot speak for themselves and lacks a MPOA.
- Apply a step-approach to effectively and compassionately deliver bad news to a patient's family.
- Respect cultural beliefs of patients and their families in end-of-life decisions.
- Explore the role of spiritual care at the end of life for patients of diverse faiths.
- Define futility.
- Consider difficult end-of-life decisions in an ethical framework.

Life-threatening Hemorrhage Simulation

- Apply the "Hs & Ts" acronym in a pulseless electrical activity (PEA) arrest.
- Recognize life-threatening hemorrhage.
- Manage logistics of resuscitating a patient who is bleeding to death.
- Appropriately consult to achieve source control of bleeding.
- Loosen a tourniquet appropriately.
- Apply a FAST exam as part of the work up of a trauma patient.
- Order hemostatic medications and agents that reverse anti-thrombotic drugs appropriately.
- Apply the principle of permissive hypotension in a trauma patient.
- Order balanced (6:6:1) transfusion and massive transfusion protocol appropriately.

Shock Resuscitation (case-based discussion)

- Recognize and classify shock (distributive, cardiogenic, obstructive and hemorrhagic) when it is encountered clinically.
- Use point of care ultrasonography to explore the differential diagnosis of shock.
- Clinically apply principles of oxygen delivery and consumption.
- Resuscitate children and adults with IVF fluids and vasopressors/inotropes.



Section B – Selective Policy and Resources

General Information

Prerequisites: All students must successfully pass all third year curricular elements to progress to the fourth year. Link to policy: [Credit Requirement Years 3 and 4 Policy](#)

Students are responsible for their own transportation to and from, and parking fees at clinical sites as indicated in the [Clinical Site Placement and Transportation Policy](#)

Professionalism Resource

The Professional Resource Office (PRO) provides guidance, support, and information to students on professionalism issues. The PRO supports students in the development of strong, positive professional practices with peers, faculty, patients and the broader community through effective communication and conflict management.

- Professionalism concerns may be reported directly to the selective director, the PRO liaisons or in the student evaluations of the selective, site, and faculty.
- The [Professionalism Conduct Comment Form](#) is an additional on-line mechanism for students to report any concerns, including those about supervision, and it exists across the four-year curriculum. This mechanism ensures confidentiality and is collected directly by the PRO.



The University of Arizona College of Medicine - Phoenix (COM-P) is committed to creating and maintaining an environment free of discrimination, harassment and retaliation that is unlawful or prohibited by university policy. Please see the [Reporting Mistreatment or Harassment of Medical Students Policy](#), the [Anti-Harassment and Nondiscrimination Policy](#) and the [Professionalism Policy](#) for additional information. In addition, professional attributes are expected of all students. These attributes are within the [Teacher Learner Compact Policy](#).

Website and contact information for the PRO is located [here](#).

Educational Program Objectives

The Educational Program Objectives (EPO) comprise competencies and the measurable objectives by which attainment of each competency can be assessed. The full text of the COM-P educational program objectives can be accessed in the [Educational Program Objectives Policy](#) and require dissemination as noted in the [Orientation to EPOs and Curricular Unit Objectives Policy](#). In addition to EPOs, the selective objectives are closely tied to student learning outcomes. COM-P



measures these outcomes both quantitatively (via NBME shelf exams) and qualitatively (via behavioral competency assessments).

Attendance Requirements

All selective experiences are mandatory, and any absence must be recorded via the absence tracking system. To submit an absence request, please use [Formsite](#).

Excused absences will be remediated as deemed appropriate by the selective director and are not to exceed 0.5 days per week on average. Exceptions to this may be considered in consultation with the selective director and the associate dean for student affairs. Please see links to the following policies:

- [Attendance and Absence Years 3 and 4 Policy](#)
- [Leave of Absence Policy](#)

Required Clinical Experiences: Procedures and Diagnosis (Px/Dx) log (Only Applicable to Critical Care)

The University of Arizona College of Medicine - Phoenix in accordance with the [Core Clinical Skills Observation Policy](#), monitors and tracks the types of patients and clinical conditions that medical students must encounter, so as to remedy any identified gaps in patients, procedures, or diagnoses across clinical sites. Details of supervision expectations for student clinical encounters can be reviewed in the [Faculty Supervision of Medical Students in Clinical Learning Situations Policy](#) and the [Faculty Supervision of Sensitive Physical Examination Policy](#). Procedures and clinical conditions will be recorded in the student's Px/Dx log and reviewed with the site or selective director at the mid-selective and end of selective review.

Across the fourth year, students must encounter the following clinical conditions, diagnoses, and procedures at the indicated level of student responsibility. Levels of student responsibility include the following:

1. **Observe and discuss:** this includes observing the key elements of care (e.g., physical exam, procedure, etc.) as they are performed by another member of the team and discussing the case, condition, and relevant clinical aspects with the team.
2. **Actively participate in care:** this includes observing and discussing, but also indicates increased active responsibility for the patient, such as performing a physical exam and workup, entering progress notes or history and physicals (H&Ps), presenting the patient on rounds, scrubbing into a case, and/or counseling or discussing prevention with the patient.
3. **Perform procedure:** this includes actively participating in care and is additionally defined as the student performing the procedure with supervision.

To best prepare you for your future career in medicine, the following scaffolding outlines the minimum understanding of each Dx and each Px. In the spirit of self-directed learning, your approach to mastery of each component is up to you.



List for each Px:

1. Explain the anatomy and pathophysiology related to the Px
2. Define relevant pharmacology to the Px
3. Summarize the informed consent process (including risks, benefits, indications, and alternatives) for the Px
4. Compare associated imaging modalities for the Px
5. Analyze potential complications and prevention or management strategies for the Px
6. Understand post procedural care, patient education and anticipatory guidance for the Px
7. THEME: Reflect upon the assigned theme objective related to Px

List for each Dx:

1. Define the key epidemiological characteristics of Dx
2. List the risk factors for acquiring Dx
3. Describe the pathophysiology of Dx
4. Create a differential diagnosis algorithm for Dx
5. Develop and initiate an effective treatment plan for Dx
6. Obtain a relevant history and physical examination for Dx
7. THEME: Reflect upon the assigned theme objective related to each Dx

Alternative Experiences

If the student does not encounter all the required clinical experiences as listed on the integrated Px/Dx list and detailed in each selective syllabus, the student will remedy the deficiency by completing the alternative experience with the appropriate selective director, utilizing the process outlined in the selective specific portion of the syllabus.

Assessment Process

Formative Assessments

Throughout the selective, faculty (including nurse practitioners and physician assistants with faculty title), fellows, and residents engaged in student teaching and supervision will provide formative feedback in a variety of formats (e.g., review of progress notes, H&P, direct observation forms, informal feedback, narratives, PRIME+ form, NCAT, etc.) that may be communicated in writing or verbally. The purpose of this feedback is to help students identify strengths and opportunities for improvement. Students should proactively request formative feedback on a regular basis and the required frequency for written formative feedback is outlined in the selective specific section of each syllabus.

Any significant deficiencies or concerns should be communicated by the faculty to the selective and/or site director with written documentation that the feedback has been provided to the student. If deficiencies or problematic issues are noted late in the selective, timely feedback will be given by an assessor to offer the student the opportunity to improve. Ideally this should have occurred prior to assigning a score of a “does not meet expectations” on an EPO. The selective director maintains the ability to assign a summative Level 1 for an egregious action even late in selective.



Summative Assessment

The University of Arizona College of Medicine - Phoenix has internal deadlines for the summative assessment forms to ensure the LCME 6-week requirement is met. The end of rotation form is to be completed by the faculty within two weeks of the rotation ending. This will allow for selective directors to complete the final grades as close to the four-week mark as possible. All end-of-rotation assessment forms and the selective final grade form can be viewed by students in one45 six (6) weeks after the end of the selective according to the [Final Grades Reporting Timeline Policy](#).

What to do if an assessor is not listed in one45 or myTIPReport

Contact the COM-P coordinator, (PBC-Evaluation@email.arizona.edu) and selective director.

Conflict of Interest

It should be noted that faculty at the COM-P who are family members of the student, have a personal relationship with the student, or are/have been health service providers of the student, may not be involved in the academic assessment or promotion of the medical student as described in the [Conflict of Interest - Physician - Student Personal Relationship Policy](#) and the [Conflict of Interest - Physician-student Health Services Relationship Policy](#).

Standardized Grading Process

The final selective grade will be determined by the selective director using the composite score (comprised of clinical score, exam score, “non-clinical” score) and additional criteria for grading approved by the Curriculum Committee (explained further in the “calculating the final grade” section below). The final selective grade will be divided into five categories: Honors, High Pass, Pass, Incomplete, or Fail (H, HP, P, I, F). Details regarding grading in the selective are included in the [Grading and Progression for Electives and Selectives Policy](#).

Calculating the Final Grade

See the selective specific portion of the syllabus.

Narrative Feedback

The selective final grade form includes two separate areas which include narrative feedback. The first area includes formative comments from the end of rotation forms, the second includes formalized summative comments which will be included in the Dean’s Letter (MSPE). The summative final comments are generally not a direct “cut and paste” but rather a sample summary determined by the selective director. The selective director has the discretion to include or not include comments based on their interpretation of which best summarize the student’s performance over the entirety of the selective. Students are not permitted to select specific comments to be included or excluded in their narrative grade form. Students do not grade or summarize their own performance. Any concerns regarding narrative comments may be addressed to the selective director, associate dean clinical and competency based education or associate dean of student affairs (see the [Student Progress Policy](#) for more information).



Required Student Evaluation

Assigned student evaluation of the selective, sites, and didactics is required. The student must complete evaluations online in the required time frame. All comments will be expected to model constructive feedback using the W3 model and must contain references and comments to specific behaviors and/or events (positive or negative).

If the student does not complete the required assigned evaluations within one week after the end of the selective, the student will be assigned a formative Level 1 for the EPO targeting giving and receiving constructive feedback and will be required to submit the missing evaluation data in narrative form within the second week after the selective.

Once the student has successfully submitted their evaluation in narrative form within the second week after the selective the student will have successfully demonstrated meeting expectations in professionalism.

If the student has not successfully submitted their evaluation in narrative form within the second week after the selective the student will be considered as having not met expectations and a summative Level 1 rating for the EPO targeting giving and receiving constructive feedback, will be automatically assigned. The office of assessments and evaluation will track this and report to the selective director.

For more information, see the [Assessment and Evaluation of Students, Faculty and Curriculum Policy](#).

Deadline Compliance

The following requirements must be completed as part of the selective requirements.

1. Duty hour logging is due at the end of the rotation by **Sunday at 11:59pm**. See the [Duty Hours Policy](#) for specifics regarding duty hour limits, documentation of hours, and a FAQ section.
2. Required procedure/diagnosis (Px/Dx) logging is due at the end of the rotation by **Sunday at 11:59pm**.

NOTE

- **A formative Level 1** will be given if the duty hour or Px/Dx log requirement is not completed by the end of the rotation **Sunday at 11:59pm**. The student will have until Tuesday at 11:59pm following the conclusion of the selective to remediate the duty hour or Px/Dx logging requirement. All logs must be completed accurately.
- **A summative Level 1** will be given for any failure to properly complete the duty hour or Px/Dx log requirement by **Tuesday at 11:59pm** following the completion of the selective. **A grade of Incomplete** will be given until requirements are met. All logs must be completed accurately.
- The Level 1 will be on a single professionalism EPO related to accountability. Compliance with these deadlines will be determined by CCBE and reported to the office of assessment and evaluation.



THE UNIVERSITY OF ARIZONA

College of Medicine

Phoenix

- A summative Level 1 will be taken into account as part of a comprehensive assessment and final grade. All summative, or “final”, Level 1 ratings are tracked by the office of assessment and evaluation in collaboration with the office of student affairs. cumulative level ratings are retained throughout the student’s enrollment. See [Competency Assessment Policy](#).
- 3. Completion of the mid-selective feedback forms (PRIME+) (see the [Competency Assessment Policy](#)).
- 4. Completion of assigned site, faculty, and end of the selective evaluations (see the [Assessment and Evaluation of Students, Faculty and Curriculum Policy](#)).

Additional Resources

Rural Health Professions Program

Students scheduled for rural rotations must complete required documents and attend a rural rotation orientation.

Housing expenses are supported by the rural health professions program (RHPP) and funded by [Arizona Area Health Education Centers](#) (AzaHEC). Students are responsible for damages and incidental charges. Housing options vary depending on rotation location. In most cases, it is pre-arranged by RHPP staff, in others, the preceptor or health center hosting the student provides housing (occasionally in the home of the faculty). Occasionally, students are asked to make their own arrangements. Housing options, at times, are limited and may require sharing common areas and bathrooms with other students. Individualized accommodation requests cannot be guaranteed, therefore flexibility and a resilient attitude is key to having a great experience. Once housing has been secured, changes are generally not allowed less than six weeks prior to the rotation. In addition to housing, AzaHEC also funds one round trip to and from the rural site and a small stipend applied to the student’s bursar’s account.

Contact Information: Director, RHPP - Jonathan Cartsonis, MD

Email: jcartsonis@arizona.edu, Phone: 602-684-0598

Urgent/Emergent Health Care Services

On-Campus and in the Immediate Phoenix Area

Students can access the list of local healthcare services on the COM-P website. Students are given a rectangular card that contains a list of emergency contact numbers and local healthcare service addresses and phone numbers. This card is placed in their identification holder along with their COM-P identification to allow easy access to healthcare information while at instructional sites. All information is accessible on the wellness website at wellness.arizona.edu.

For a list of emergency contact numbers please visit the COM-P website at the following link: [Security - Emergency Numbers](#).

All sites are assessed for student safety. Details of this assessment are included in the [Training Site Safety Policy](#).



Faculty shall not provide health services for students if they are directly involved in the assessment of the students; however, in the event of an emergency, faculty should perform services to stabilize a student until the appropriate transfer of care can occur. Please see the [Conflict of Interest - Physician-Student Health Services Relationship Policy](#).

COM-P requires that all students have an updated immunization record. Please see the [Immunization and Health Screening Policy](#) for details regarding the contents of the record.

In the event of any exposure to blood/bodily fluids through needle stick, inhalation, mucus membrane or skin exposure, or percutaneously, students must follow the required procedures as indicated in the [Student Exposure to Potentially Infectious Agents and/or Hazardous Materials Policy](#), with steps on the student occupational exposure procedure card.

Expectations for Mobile Communication

The student must always be reachable during usual extended work and on-call hours, and if in a clinical setting, the student should respond within 15 minutes. Most students opt to provide their mobile number for texts; however, the pager and/or voice capability of the cell phone must be functional and available i.e., on the student's person for calls/pages daily. Not responding to calls or pages will be viewed as a deficit in *interpersonal skills and communication*, as well as *professionalism*.

Accessibility and Accommodations

The University of Arizona strives to make learning experiences as accessible as possible. If there is anticipation or experience of barriers based on disability or pregnancy, please contact the disability resource center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

one45: Curriculum Management System

one45 is the curricular management system used to manage evaluations, end of rotation assessments, final grade forms, and to access learning materials and schedules. General information about the selective rotations, such as syllabi, site information, learning objectives, materials for didactic sessions, links, etc. will be attached as handouts to each selective "course" under handouts and links within one45. one45 can be accessed at the web address: [one45](#)

Assessments are collected via one45, and automatic emails are sent to attendings with instructions and reminders to complete. A list of pending and completed assessments can be reviewed in one45, if applicable. Students will use Oasis to log observed Px/Dx at clinical sites. Students can use their smartphones to make log entries on-the-go, if allowed by site policy where the student is rotating.

OASIS: Course Schedule

The University of Arizona College of Medicine - Phoenix uses a web-based scheduling system, Oasis. Oasis maintains site information, student schedules, course catalog, and various other details that are pertinent to the clinical rotations. Oasis has detailed, up to the minute course information and allows students to request schedule changes. All students will use this resource for any scheduling purpose throughout their 3rd and 4th year of clinical rotations. Oasis can be accessed on the web address: [OASIS](#)

myTipReport Formative Assessment Application (Only Applicable to Critical Care)

myTIPReport is an application (app) that the University of Arizona College of Medicine - Phoenix uses to collect formative assessments and end of rotation student self-assessment/reflection for the selective rotations. myTIPReport can be accessed via the app and at the web address: [myTIPReport](#)

Formative assessments are collected via myTIPReport, and automatic emails are sent to assessing faculty, fellows, or residents with instructions and reminders to complete. A list of pending and completed assessments can be reviewed in myTIPReport.

Student Use of University Sponsored Educational Material

Statement of copyrighted materials: all lecture notes, lectures, study guides and other course materials (besides the required reading) disseminated by the instructor to the students, whether in class or online, are original materials and reflect the intellectual property of the instructor or author of those works. All readings, study guides, lecture notes and handouts are intended for individual use by students. These materials may not be distributed or reproduced for commercial purposes without the express consent of the instructor. Students who sell or distribute these materials for any use other than their own are in violation of the [Arizona Board of Regents Intellectual Property Policy](#). Violations of the instructors' copyright may result in course sanctions and violate the code of academic integrity.