

**Course Name: Exploration of Point of care Ultrasound Course Number: EMED-2003**

**Department:** Department of Emergency Medicine

**Faculty Coordinator:** Mandy Pasqual MD  
Jodi Jones, MD

**Location: (where rotation is offered) PMH**

**Length:** 2 weeks

**Prerequisites (if any):** Pre-Clerkship students only

**Periods offered:** 1-12

**Number of students per 2 week period:** 2

**First day Contact:** Connie Chow; [Connie.Chow@UTSouthwestern.edu](mailto:Connie.Chow@UTSouthwestern.edu)

Mandy Pascual; [Mandy.Pascual@UTSouthwestern.edu](mailto:Mandy.Pascual@UTSouthwestern.edu)

**First day time:** Varies, will be notified by email prior to the first day of the rotation

**First day location:** Virtual and Parkland ED

**I. Course Description:**

EMED 2003 is designed to introduce to students a fundamental understanding of goal-directed point of care ultrasound, a method of examination that answers specific and important clinical questions. Drawing upon the skills of basic anatomy knowledge, clinical physical exam and the selection of the appropriate patient based on presenting complaint, high quality ultrasound images will be obtained at the bedside. It is expected that the student learner will be able to integrate point of care ultrasound knowledge along with other investigations into the clinical picture for a given patient scenario. The skills acquired in bedside ultrasonography will be applicable not only to emergency medicine but to other specialties including internal and family medicine, OB/GYN, critical care, surgery, anesthesiology, radiology, orthopedics and pediatrics, just to name a few.

**II. Learning goals/objectives/Assessments:**

Goals	Objectives	Assessment methods
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<p><b>Patient Care:</b> Students will learn how to integrate ultrasound into the clinical evaluations and investigations of multiple patients at the bedside.</p>	<p><b>1.</b> Use of point-of-care ultrasound to perform limited, focused diagnostic ultrasound evaluations to improve patient care.</p>	
<p><b>Medical Knowledge:</b></p> <ol style="list-style-type: none"> <li>1. Understand the basic knowledge of clinical and point-of-care ultrasound</li> <li>2. Recognize indications for point-of-care ultrasound</li> <li>3. Recognize classic examination windows and be able to interpret bedside ultrasound of anatomical regions in a timely manner</li> <li>4. Learn to identify the key anatomic landmarks and ultrasonographical findings used to diagnose focused pathologic conditions</li> </ol>	<ol style="list-style-type: none"> <li>1. Interpret images of FAST, aorta, cardiac, biliary, renal, thoracic, DVT, and soft tissue/abscess examinations.</li> <li>2. Identify free fluid on an abdominal/thoracic ultrasound</li> <li>3. Identify pathologic conditions with ultrasound, i.e. cholecystitis, pneumothorax, hydronephrosis, ascites, AAA, and abscess.</li> </ol>	
<p><b>Interpersonal and Communication skills:</b></p> <ol style="list-style-type: none"> <li>1. Communicate with patients during performance and evaluation of bedside US examinations</li> <li>2. Communicate effectively with other ultrasound team members</li> <li>3. Understand development of US imaging storage systems and their role in learning, clinical</li> </ol>	<ol style="list-style-type: none"> <li>1. Create patient and family rapport during required number of ultrasound examinations</li> <li>2. Demonstrate verbal, written and imaging skills regarding point-of-care ultrasound with fellow students, residents and faculty</li> <li>3. Correctly save, store and retrieve US imaging for learning and quality improvement purposes.</li> </ol>	<p><i>The student will be evaluated based on oral input during teaching sessions.</i></p>

care and quality improvement		
<b>Professionalism:</b> Students must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. <ol style="list-style-type: none"> <li>1. Develop behaviors respectful of patient comfort and privacy while performing exams</li> <li>2. Present self as professional health care team member in all aspects of bedside patient care utilizing point-of-care ultrasound</li> </ol>	<ol style="list-style-type: none"> <li>1. Demonstrate how to appropriately drape patients during appropriate ultrasound examinations.</li> <li>2. Demonstrate professional appearance and behaviors toward patients and medical colleagues</li> </ol>	
<b>Practice Based Learning and Improvement:</b> <ol style="list-style-type: none"> <li>1. Systematically use quality improvement (QI/QA) methods as basis of point-of-care ultrasound skill improvement</li> <li>2. Develop methods of learning such as evidence based medicine, online resources in point of care ultrasound</li> <li>3. Incorporate formative rotation evaluation feedback into self-reflection and setting learning goals</li> </ol>	<ol style="list-style-type: none"> <li>1. Participate and contribute to scheduled QA review of all completed studies, both by student, residents and faculty during twice weekly conferences</li> <li>2. Mastery of utilizing references such as American College of Emergency Physician's online ultrasound curricula, SonoGuide, core texts such as Emergency Ultrasound by Ma, Mateer and Blaivas.</li> <li>3. Participate in real time and scheduled evaluation sessions by fellow ultrasound students, fellows and</li> </ol>	

	faculty.	
<b>System based practice:</b> <ol style="list-style-type: none"> <li>1. Understand the value and use of point-of-care ultrasound across all medical specialties in the care of various populations of patients.</li> <li>2. Learn about the integration of point-of-care ultrasound in local hospital systems, Prehospital environments, and institutional educational programs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Demonstrate examples and application of ultrasound in clinical areas such as wards, clinics, intensive care units and other areas of patient care.</li> <li>2. Provide evidence of integration of ultrasound principles and practice in undergraduate/graduate medical education, patient care and research purposes using online resources and local system uses.</li> </ol>	

### III. Methods of Instruction:

#### a. Didactic

- i. Scheduled student ultrasound principle and clinical lectures, prerequisite online lectures
- ii. Read and review online resources such as American College of Emergency Physicians (ACEP) Ultrasound for Emergency Physicians (<https://www.acep.org/sonoguide/>) and other provided web based resources
- iii. Participate in mandatory CQI sessions with ultrasound residents, fellows and faculty as scheduled
- iv. Attendance at Emergency Medicine and specific ultrasound conferences

#### b. Hands on learning

- i. Proctored bedside exams and procedural assistance techniques with dedicated ultrasound residents, fellows and faculty

#### **IV. Schedule:**

##### **ORIENTATION:**

Students will be expected to be enrolled in this course as the first day of the UTSW academic periods. **The first two teaching sessions are mandatory orientation days where you will meet the members of Team Ultrasound, consisting of the US attending, fellows and residents. All meeting times are non-negotiable and may not be missed for any reason.** Often the POCUS student period will be offset from the EM/Resident blocks of time. Prior to the Monday that begins a student period, and each twice weekly teaching sessions there is a great deal of online prerequisite work that must be done. These involve video lectures that must be reviewed prior to your first teaching session on the first Monday of each period.

##### **Prior to First Monday:**

Contacted via email about the orientation session

##### **First Monday:**

- Meet Team Ultrasound virtually
- Orientation to course, machines, procedures, storing images et.al
- Hands on sessions

##### **Weekly Schedule:**

Every teaching session (virtual and in-person) throughout the course is a **MANDATORY** event and must be attended.

After your first day, Team Ultrasound will supply you with dates of resident, fellow, and attending schedules. These scanning shifts will be proctored. More information on when and how will be given to you during orientation.

Twice weekly QA, didactics and simulation procedural assistance throughout the 4-week period

#### **V. Course requirements:**

- a. Complete all required online lectures
- b. Attendance and participation at all structured ultrasound (both virtual and in person) and EM conferences.

- c. Maintain high professional standards and be an interested participant as expected of all medical students.

## **VI. Methods of evaluation:**

- a. Pass/Fail grading structure
- b. Students will be assigned a grade [Pass/Fail] based on attendance, participation, case presentations and interactions with residents, faculty, staff, and patients. Specific criteria such as number of point of care scans performed during each ED shift, quality of the students performed scans and overall student attitude, improvement and completeness will be used as factors in grade assignment.
- c. An end of rotation evaluation form will be filled out and submitted by Team Ultrasound for each student. Each student is encouraged to consult with the course directors and Team Ultrasound as the weeks progresses to obtain real time feedback on areas of strengths and weaknesses so that there are no surprises when it comes down to formal written evaluations.

## **VII. Recommended reading:**

The more you experience online learning in Ultrasound, the greater of an appreciation you will have when spending time with your dedicated Ultrasound faculty and residents. Take the time to review what is out there in the world. A huge variety of resources exist for self-learning in POCUS.

- a. ACEP Section on US website: <https://www.acep.org/sonoguide/>
- b. Society of Ultrasound in Medical Education; <http://www.susme.org/learning-modules/learning-modules>
- c. AIUM: <https://learn.aium.org/lectures>
- d. Emergency Ultrasound 4th ed. Ma O. Mateer J. Blaivas M. 2021
- e. ACEP EFAST Trauma Ultrasound: <https://itunes.apple.com/us/app/trauma-ultrasound-ebook/id714242498?mt=8>
- f. Emergency Ultrasonography, Hayden G.  
<http://emergencyultrasoundteaching.com/index.html>
- g. [Ohio State's iPhone/Android app for POCUS](#)
- h. [SAEM's Academy of Emergency Ultrasound](#)

These are not meant to be an exhaustive list and multiple more resources can be found. Start exploring and learning!

