

# UT SOUTHWESTERN DEPARTMENT OF SURGERY

## TECHNICAL SKILLS COURSE OUTLINE

**Course Title:**           Ultrasound-guided central line insertion and chest imaging

**Course Director:**       Name: Heidi Frankel, MD, FACS  
                                  Specialty: Trauma and Surgical Critical Care

**Additional Course Faculty:**   Name: BTCC Faculty and Fellows  
  Specialty: Surgery

**Participants:**   Specialty: General Surgery  
                          Level: PGY 2 Residents

**Expected Attendance:** 17 Trainees in 1 of 3 sessions  
                                  # of Wednesday Morning Sessions Assigned to Each Trainee: 1  
                                  Duration of Each Session (max 2 hrs): 1.5 hrs  
                                  # of Trainees per session: 6

**Course Completion Verification** - Trainees have successfully completed the course if attendance is verified and if proficiency in CVP insertion and chest drain is determined.

**Self-study or Self-practice** (Is self-study or self-practice an expectation of this course?)

       No

  X   Yes (*specify*) View slide set and pass pre-test

**Self-study** component(s): \_\_\_\_\_  
Estimated time requirements for self-study: 2 hrs.  
During what phase(s) of the course is self-study to be completed? precourse

**Self-practice** component(s): No  
Estimated time requirements for self-practice: \_\_\_\_\_ hrs.  
During what phase(s) of the course is self-practice to be completed? \_\_\_\_\_

**Training Location(s):** Skills lab

**Equipment/Simulator(s):** B&K ultrasound unit

Blue Phantom models

Other Resources (Textbooks, CD-ROMS, Videos, etc):

Educational Scope:

**Skills:** Essential practices and physics of ultrasound imaging; proper transducer selection and orientation in B mode (Brightness)

**Cognitive:** Applications of ultrasound principles to clinical imaging in the SICU setting – vascular and thoracic imaging

**Judgment:** Developing ultrasound imaging skills to perform at the bedside of critically ill surgical/trauma patients

Learning Objectives:

1. Understand essential ultrasound practices and physics principles
2. Understand indications and limitations of bedside ultrasound imaging
3. Incorporate ultrasound imaging and interventional/therapeutic modalities including central line and pleural drain insertion procedure
4. Improve patient safety by ultrasound imaging prior to invasive procedures

Summary of Curriculum, Teaching Methods, and Resource Utilization:

All residents will complete the *ACS Ultrasound for Surgeons CD-ROM* and pass the web-based examination.

Trainees will perform central line insertion on a phantom and image and instrument a thoracic phantom.

Methods for giving feedback to learners (Formative and Summative): Formalized feedback will be given immediately to course participants by the course director. Residents will perform 20 ultrasound-guided central line placements to be deemed proficient (will capture in SNIPS) and visit practice station annually.

All SICU procedures, with or without the use of ultrasound guidance, will be observed by an SICU/Trauma attending. Immediate verbal feedback will be provided.

Methods for Assessment of Learners: Immediate verbal feedback. Also, any procedure complications will be recorded in the SICU database so that patient safety and quality improvement processed can be reviewed.

Methods for Course Evaluation: by Learners-open feedback  
By Faculty-open feedback

Materials: Blue Phantom vascular and chest phantoms (2)