

## Emergency Medicine/Point of Care Ultrasound Course

2024

16 AMA PRA Category 1



## **Emergency Medicine/Point of Care Ultrasound**

Faculty: Shawn Shanmuganathan BS, RDMS, RVT

### **Welcome to Advanced Health Education Center**

As the Senior Vice President, I would like to thank you for choosing Advanced Health Education Center's (AHEC) for your Ultrasound training course. The faculty, staff, and fellow students join me in welcoming you. We will make reasonable efforts to ensure that your time with us is enjoyable as well as educational. These courses are designed to help you develop the skills and acquire the information necessary to perform at a high level of competency in sonography. There are various areas in which you will be evaluated during the course to ensure your learning and success.

AHEC has been a leading provider of continuing education for healthcare professionals in imaging sciences since 1988. Our mission is to provide you with evidence-based education and training that will increase your knowledge, enhance your competency, and improve patient care. Since receiving ACCME Accreditation in 1998, we have assisted in the development of ultrasound skills for physicians, sonographers, nurses, midwives and other healthcare professionals.

The registration packet is designed to provide students with general information regarding AHEC, course information, CME credit, and disclosure of relevant financial interest. We wish you well in your professional advancements and are here to assist you in pursuing your educational goals. Please contact us if we can be of further assistance to you at 1-800-239-1361.

Congratulations and good luck pursuing your professional goals!

Best,



*KReddix*

Kelli Reddix, MBA, BAAS, LVN  
Senior Vice President  
Phone 1-800-239-1361 • 8502 Tybor, Houston, Tx, 77074



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## Course Overview

**Event Location:** Advanced Health Education Center  
8502 Tybor Drive  
Houston, Texas, 77074

**Credit:** 16 AMA PRA Category 1™

**Time:** 8:00 am – 5:00 pm

**Instructor:** Shawn Shanmuganathan BS, RDMS, RVT

## Course Description

The two-day ultrasound program is a systematic presentation using an integrated teaching approach of lecture, assigned reading, testing, demonstration, and clinical scanning of models. Didactic training is reinforced through clinical laboratory experience.

The “Golden Hour” is one of the pillars of emergency medicine. Capitalize on the speed and accuracy of ultrasound to take advantage of every minute. Having the skills to evaluate the abdomen (the FAST procedure), first trimester pregnancy and cardiac ultrasound may make the difference between life and death. Participants in this course will benefit from “hands-on scan labs” where you will practice the essential skills and techniques to acquire an ultrasound image for quick and accurate diagnosis.

This course begins with lecture where faculty will review the basics such as: ultrasound physics and instrumentation, anatomy, and procedures and protocols. Following lecture, participants will benefit from our on-site scanning lab with live models for extensive hands-on practice. The course content is based on ACEP guidelines for the performance of Emergency Medicine Ultrasound.

**Faculty:** Shawn Shanmuganathan - No relevant financial relationships to disclose.

## Course Objectives

### Introduction to Emergency Medicine

- Identify the appropriate equipment settings and transducer selection for different ultrasound applications
- Identify and display appropriate normal and abnormal anatomy and orientation in the ultrasound field of view
- Understand variations in scanning protocols for demonstration of pathologies in emergency medicine examinations
- Successfully perform a focused abdomen exam
- Successfully perform a trauma FAST exam
- Successfully perform the protocol for a bedside cardiac evaluation of pericardial effusion
- Successfully perform a venous system exam
- Discuss scanning techniques for the performance of the female patient and first trimester OB with transabdominal approaches (lecture and phantom only)



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## Course Topics

### Introduction to Emergency Medicine

- Ultrasound physics and instrumentation
- Anatomy of the abdominal and retroperitoneal structures
- Abdominal scan protocols, image orientation, and pathology
  - Aorta, Inferior Vena Cava, Pancreas
  - Kidneys and Bladder
  - Right Upper Quadrant, Morison's pouch
  - Left Upper Quadrant to include Spleen and Left Kidney
  - Both Lower Quadrants
- Focused Assessment by Sonography in Trauma (FAST) procedure protocol
- Cardiac 2D and M-Mode imaging – Sub-xiphoid, PSLA, PSSA, Apical 4 chamber
- Evaluation of pericardial and pleural effusion
- OB/GYN ultrasound anatomy and procedures
  - First trimester pregnancy imaging with (lecture and/or phantom only)
  - Early gestation and ectopic pregnancy (lecture only)
- Ultrasound appearance of pathology in case studies



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## Course Schedule

Lecture 8am-12 noon | Lunch 12-1pm | Scan Lab 1pm-5pm

### Day One

#### ***8:00am -12:00pm***

- Physics and Instrumentation
- Abdominal
- FAST Scan
- GYN
- Ectopic Pregnancy
- OB 1<sup>st</sup> Trimester

#### ***1:00pm-5:00pm***

- Hands-on Demonstration/Participation with live models

### Day Two

#### ***8:00am-12:00pm***

- Doppler Principles
- Cardiac
- Venous
- Needle Localization/Line Placement

#### ***1:00pm-5:00pm***

- Hands-on Demonstration/Participation with live models



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## Skills Checklist

The participant demonstrates an understanding of the following controls to optimize the image:

### Physics and Instrumentation

- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> On/Off       | <input type="checkbox"/> Dynamic Range             |
| <input type="checkbox"/> Output/Power | <input type="checkbox"/> Presets                   |
| <input type="checkbox"/> Depth        | <input type="checkbox"/> Calipers                  |
| <input type="checkbox"/> Master Gain  | <input type="checkbox"/> Freeze/Cine               |
| <input type="checkbox"/> TGC/DGC      | <input type="checkbox"/> Color/Power/Pulse Doppler |
| <input type="checkbox"/> Focal Zones  | <input type="checkbox"/> Zoom                      |

The participant identifies the following for adult and pediatric patients:

### Abdomen

- |   |  |
|---|--|
| <input type="checkbox"/> Gallbladder in at least two planes | <input type="checkbox"/> Kidney in at least two planes |
| <input type="checkbox"/> Measure the CBD, GB wall           | <input type="checkbox"/> FAST exam                     |
| <input type="checkbox"/> Visualize the Main Portal Vein     | <input type="checkbox"/> Aorta in two planes           |
| <input type="checkbox"/> All lobes of the Liver             | <input type="checkbox"/> Measure the Aorta             |
| <input type="checkbox"/> Spleen two planes                  |  |

### OB

- Trans-abdominal exam (Theory & Phantom only)
- M-mode for fetal heartbeat (Theory)

### Veins and DVT

- Identify veins of the lower extremity
- Compression techniques to identify DVT

### Cardiac

- Visualize the heart in standard Imaging planes
- Identify the pericardium



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### **CME Credit:**

- “The Advanced Health Education Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.”
- “The Advanced Health Education Center designates this educational activity for a maximum of 16 hours AMA PRA Category I™. Physician should claim credit commensurate with the extent of their participation in the activity.”

### **AHEC Cancellation and Refund Policy for Skills Courses:**

AHEC defines a skills course as a limited enrollment course where a received registration with payment reserves your place in a course (i.e. all Ultrasound courses, Mammography Initial Training and other theory courses). For cancellations received at least two weeks prior to the course date, a refund less a 30% processing fee will be given. Within two weeks of the course, no refund is given, but a tuition credit – less a 30% processing fee – may be applied to a future course. No refunds or tuition credit is given for non-attendance. Facilities may substitute employees by notification to AHEC at least one week in advance.

### **Disclosure of Relevant Financial Interest for Individuals in Control of Content:**

As a provider accredited by the ACCME, Advanced Health Education Center, Ltd ensures balance, independence, objectivity, and scientific rigor in all of its sponsored educational activities.

In addition to the identified CME faculty member for an educational activity, all non-faculty, including committee members and administrative personnel involved in the planning, development or production of the sponsored activity and/or authorship or review of enduring materials do not have any relevant financial interest to disclose. Financial interest includes but is not limited to relationships with commercial companies, manufacturers, or corporations, whose products or services are related to the subject matter of the presentation within the prior 12 months.



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The individuals listed below are acknowledged by AHEC as having control of the content, planning, development or administrative support of all educational activities.

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  - AHEC: President
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- Jence Cantu, MHA RT(R) - Committee Member
  - AHEC: Chief Executive Officer (CEO)
  - No relevant financial interest to disclose
- Peggy Hoosier, M.Ed RT(R)(M) - Program Director
  - AHEC: Chief Operating Officer (COO)
  - No relevant financial interest to disclose
- Kelli Reddix, MBA, BAAS, LVN - Planning Committee
  - AHEC: Senior Vice President
  - No relevant financial interest to disclose
- Nanette Joiner
  - AHEC: Administrative Support
  - No relevant financial interest to disclose
- Debbie Robertson, BS, RDMS
  - Ultrasound Faculty
  - No relevant financial interest to disclose
- Virlene Guzman, RT(R), RDMS, RVT
  - Ultrasound Faculty
  - No relevant financial interest to disclose
- Shawn Shanmuganathan, BS, RDMS, RVT
  - Ultrasound Faculty
  - No relevant financial interest to disclose

### **Content Validation:**

All presentations designated for AMA PRA Category 1™ are reviewed and approved by members of the curriculum committee for content validity, and to ensure that no conflicts of interest exist prior to the advertisement and delivery of the educational activity.

**The faculty and staff at AHEC welcome you!**