
AY 2026-2027

Longitudinal Ultrasound Syllabus

Longitudinal Ultrasound Course Description

The Ultrasound Course is a longitudinal senior course that spans 28 weeks during the Fall semester and 20 weeks during the Spring semester of the MS4 year. Content will be introduced in an asynchronous manner with weekly modules. The course is designed to be self-paced. Students will be able to integrate the knowledge from this course into their Sub-I, Critical Care, Bootcamp and elective course work. In addition to the modules, learners will complete two reflections, formatted as 1 minute papers, each semester.

This is a 0-credit course that is designed to supplement hands-on experience in other required and elective rotations and to enhance student preparation for residency. Students should plan to be dedicate time weekly to review assigned modules and complete a set of questions. There are no in-person activity requirements for this course.

The dates for the 2025-2026 academic year are: June 8, 2026 to May 21, 2027.

Students will be enrolled into the course using the Core Ultrasound platform, specifically SonoAnatomy. https://courses.coreultrasound.com/users/sign_in . Student progress and completion will be tracked through the application's dashboard. The one minute paper reflections will be available on Elenra for students to upload their reflections.

Ultrasound Objectives

- a. For a given clinical presentation, use data derived from the imaging to categorize the disease process and generate and prioritize a focused list of diagnostic considerations (1.3)
 - i. Understand the basic physics of ultrasound
 - ii. Understand how frequency, depth, and gain affect the image
 - iii. Integrate ultrasound findings with clinical presentation to guide patient management and decision making
- b. Demonstrate and apply understanding of key issues in performing procedures and mitigating complications (1.8)
 - i. Learn how to determine the orientation of an ultrasound image
 - ii. Learn how to assess the depth and gain of an ultrasound image

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- c. Compare and contrast normal variation and pathological states in the structure and function of the human body across the life span (2.1)
 - i. Learn how to recognize normal and abnormal sonographic appearance of organs and structures
 - ii. Learn how to obtain useful, interpretable image
 - iii. Identify anatomy for focused evaluation of hepatobiliary system, aorta, cardiovascular including heart and lungs, and genitourinary system
- d. Identify gaps in one's knowledge, skills, and /or attitudes, and perform learning activities to address them (3.1)
- e. Meet professional and academic commitments and obligations (5.7)
- f. Demonstrate honesty and integrity in all professional and academic interactions (5.6)

Integration Threads

Integration threads covered in the intersessions will include:

Geriatrics	X	Basic Science	Ethics
Professionalism	X	EBM	Patient safety
Pain Management		Chronic Illness Care	Palliative care
Quality Improvement		Communication Skills	X Diagnostic Imaging
X Clinical Pathology		Clinical and/or Translational Research	

Assessments & Professionalism

Student performance objective

- Students must complete all assigned modules, quizzes, and reflections in a timely manner by the last date of each semester.
 - Fall Semester: All required modules and reflections are due by December 18, 2026
 - Spring Semester: All required modules and reflections are due by May 21, 2027

Patient Op Log expectations: There are no Op Log entries required.

Readings: There is no additional reading material required.

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Assessments:

- Modules with accompanying quizzes.
- Two One-Minute Reflection Papers per semester.
- Professionalism: Specifically, timely completion of all assignments by the deadline and replying to email communication in a timely manner.

Grading policy:

Students will receive a grade of **Pass or Fail** based on the following:

- Online participation
- Completion of all online modules, quizzes, and reflection papers by the last day of the semester.
- Failure to complete the assignments in a timely manner will result in a Fail and referral to Grading and Promotions Committee.

Online Modules, Quizzes, & Reflections

Please access all online modules and quizzes on: https://courses.coreultrasound.com/users/sign_in

Week	Week of	Fall Topic/Module	Notes
1		Anatomy Basics: Machine Operations	8 minutes
2		Anatomy Basics: Physics	7 minutes
3		Anatomy Basics: Artifacts	17 minutes
4		Anatomy Thorax: Cardiac Anatomy	19 minutes
5		Anatomy Thorax: Cardiac Anatomy Quiz 1	29 Questions
6		Reattempt: Cardiac Anatomy Quiz 1	29 Questions
7		Pathology Cardiac: Obtaining Cardiac Window	9 minutes
8		Pathology Cardiac: Pericardial Effusion	5 minutes
9		Pathology Cardiac: Tamponade	5 minutes
10		Pathology Cardiac: Right Heart Strain	5 minutes
11		Pathology Cardiac: Endocarditis	7 minutes
12		Pathology Cardiac Image Quiz 1	25 Questions
13		Reattempt: Cardiac Image Quiz 1	25 Questions
14		Anatomy Thorax: Lung Anatomy	28 minutes
15		Anatomy Thorax: Lung Anatomy Quiz	8 Questions
16		Pathology Lung: BLUE Protocol	9 minutes
17			
18		Anatomy Thorax: Back Anatomy	9 minutes
19		Anatomy Thorax: Back Anatomy Quiz	27 Questions
20		Reattempt: Back Anatomy Quiz	27 Questions
21		Anatomy: Abdominal Wall Anatomy	5 minutes
22		Anatomy: Aorta & IVC Anatomy	9 minutes

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23		Pathology: AAA Assessment	4 minutes
24		Pathology: Aortic Dissection	4 minutes
25		Pathology: IVC Assessment	5 minutes
26		Pathology Aorta & IVC: Aorta Image Quiz 1	25 Questions
27		Reattempt: Aorta Image Quiz 1	25 Questions
28			

Week	Week of	Spring Topic/Module	Notes
1		Anatomy – Abdomen/GI: Gallbladder Anatomy	21 minutes
2		Anatomy – Abdomen/GI: Gallbladder Anatomy Quiz	16 Questions
3		Reattempt: Gallbladder Anatomy Quiz	16 Questions
4		Anatomy – Abdomen/GI: Renal & Bladder Anatomy	9 minutes
		Anatomy – Abdomen/GI: Renal & Bladder Quiz	8 Questions
5		Pathology – GI: Gallbladder	5 minutes
6		Pathology – GI: Appendicitis	5 minutes
7		Pathology – GI: Small Bowel Obstruction	3 minutes
8		Pathology – GI: Gallbladder Image Quiz 1	25 Questions
9		Reattempt: Gallbladder Image Quiz 1	25 Questions
10			
11		Pathology – Renal & Bladder: Hydronephrosis	5 minutes
		Pathology – Renal & Bladder: Bladder Volume	2 minutes
		Pathology – Renal & Bladder: Ureterolithiasis Case	4 minutes
12		Pathology – Renal & Bladder: Renal Image Quiz 1	25 Questions
13		Reattempt: Renal Image Quiz 1	25 Questions
14		Anatomy – Endocrine/GU: Neck Anatomy	19 minutes
15		Anatomy – Endocrine/GU: Neck Anatomy Quiz 1	31 Questions
16		Reattempt: Neck Anatomy Quiz 1	31 Questions
17		Pathology – eFAST Exam	5 minutes
		Pathology – FAST Image Quiz 1	25 Questions
18		Pathology – Soft tissue: Abscess vs Cellulitis	5 minutes
		Pathology – Necrotizing Infection	4 minutes
19		Procedure – Access: CVC Part 1 Equipment	5 minutes
		Procedure – Access: CVC Part 1 Technique	5 minutes
		Procedure – Access: CVC Part 1 Site Specific Tech	5 minutes
		Procedure – Access: CVC Part 1 Confirmation	4 minutes
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Contact Information

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Approved by CEPC/M.Francis: March 2026