

Diagnostic Medical Sonography Program

Course Syllabus

Modules 1–4

Module 1 – Introduction to Diagnostic Medical Sonography & Scanning Fundamentals

Course Overview

This module introduces students to the profession of Diagnostic Medical Sonography and the fundamental principles of abdominal ultrasound imaging. Students will develop a basic understanding of ultrasound physics, patient care, scanning terminology, and abdominal anatomy.

Learning Objectives

Upon completion of this module, students will be able to:

- Explain the role of the diagnostic medical sonographer.
- Describe how ultrasound produces diagnostic images.
- Identify the major abdominal organs.
- Locate the four abdominal quadrants.
- Explain basic ultrasound terminology.
- Demonstrate proper patient preparation.
- Understand ALARA and ultrasound safety principles.

Required Activities

- Watch Lesson Lecture
 - Complete Fill-in-the-Blank Assignment
 - Complete Anatomy Labeling Worksheet
 - Complete Lesson Reflection
 - Pass Chapter Examination
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Module 2 – Liver Sonography: Anatomy, Scanning Techniques & Pathology

Course Overview

This module focuses on the anatomy, physiology, vascular supply, scanning techniques, and common pathology of the liver. Students will learn how to identify normal liver anatomy and recognize common liver abnormalities.

Learning Objectives

Upon completion of this module, students will be able to:

- Identify all liver lobes.
- Explain liver function.
- Describe portal and hepatic venous anatomy.
- Demonstrate proper liver scanning techniques.
- Identify normal liver echotexture.
- Recognize fatty liver disease, liver cysts, and basic pathology.
- Understand Doppler evaluation of hepatic vessels.

Required Activities

- Watch Lesson Lecture
- Complete Fill-in-the-Blank Assignment
- Complete Liver Anatomy Labeling
- Complete Reflection Assignment
- Pass Chapter Examination

Module 3 – Gallbladder & Biliary System Sonography

Course Overview

This module introduces students to gallbladder anatomy, biliary duct anatomy, scanning protocols, patient preparation, and common gallbladder pathology. Students will learn to recognize gallstones, biliary sludge, polyps, and acute cholecystitis.

Learning Objectives

Upon completion of this module, students will be able to:

- Identify the fundus, body, and neck of the gallbladder.
- Describe the biliary tree.
- Explain bile production and flow.
- Perform proper gallbladder scanning techniques.
- Recognize normal sonographic appearance.
- Differentiate gallstones, sludge, and polyps.
- Identify sonographic Murphy's Sign.

Required Activities

- Watch Lesson Lecture
 - Complete Fill-in-the-Blank Assignment
 - Complete Image Labeling Worksheets
 - Complete Lesson Reflection
 - Pass Chapter Examination
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Module 4 – Pancreas Sonography

Course Overview

This module introduces students to pancreatic anatomy, scanning techniques, surrounding vascular landmarks, and common pancreatic pathology. Students will learn how to evaluate the pancreas while recognizing common imaging challenges caused by bowel gas and patient body habitus.

Learning Objectives

Upon completion of this module, students will be able to:

- Identify the head, neck, body, and tail of the pancreas.
- Describe the relationship between the pancreas and surrounding organs.
- Identify the splenic vein, superior mesenteric artery, superior mesenteric vein, and portal confluence.
- Perform longitudinal and transverse pancreatic scanning.
- Explain proper patient preparation.
- Recognize normal pancreatic echogenicity.
- Identify common pancreatic abnormalities, including pancreatitis, cysts, masses, and duct dilation.

Required Activities

- Watch Lesson Lecture
 - Complete Fill-in-the-Blank Assignment
 - Complete Anatomy Labeling Worksheet
 - Complete Lesson Reflection
 - Pass Chapter Examination
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Grading Policy

- Lesson Participation – 10%
- Assignments – 25%
- Anatomy Labeling Worksheets – 20%
- Lesson Reflections – 10%
- Chapter Examinations – 35%

Passing Score: 80% or higher is recommended before progressing to the next module.

Student Expectations

Students are expected to:

- Complete each lesson in order.
- Submit all required assignments.
- Review lecture materials before taking chapter exams.
- Participate in all anatomy labeling exercises.
- Maintain academic integrity.
- Contact the instructor if additional assistance is needed.

By successfully completing Modules 1–4, students will have a strong foundation in abdominal sonography and will be prepared to continue with more advanced abdominal imaging topics throughout the Diagnostic Medical Sonography program.