

Spring 2017 DI 150 Lab Syllabus.

Monday 9:00 am – 11:45 am

Ultrasound Hands-on Laboratory Training

Ultrasound hands-on laboratory training will involve:

- Using the theoretical material presented during lectures as a basis for hands-on training.
- Applying theoretical knowledge to practice.
- Learning to follow proper ultrasound scanning protocols
- Acquiring optimal quality of diagnostic images
- Proper operating of ultrasound machines and maximizing the us machines' capabilities
- Gaining practical experience under the guidance of the lab instructor.

Instructional Methods

- In-class hands-on scanning, using ultrasound machines and other lab equipment
- Live demonstration ultrasound imaging of organs and blood vessels
- The instructor's guidance to developing students' scanning skills.
- Group work, discussions and ultrasound case analysis
- Ultrasound laboratory video demonstrations
- Students Self Study scanning: **15 lab hours** minimum of independent scanning throughout the semester

Ultrasound Hands-on Laboratory Examination:

During the Hands-On Lab Examination, students should demonstrate:

1. The understanding of the information presented primarily during the lectures and hands-on laboratory training.
2. The knowledge of the anatomy, physiology, normal variations, and pathology of the human body
3. In-depth knowledge of the ultrasound scanning protocols and the ability to present images in a logical sequence.
4. The use of different acoustic windows to achieve the best picture quality possible.
5. The ability to select the proper transducer for the exam
6. The knowledge of the ultrasound machine capabilities for the optimal quality of diagnostic images (frequency, TGC, B-mode, focal zones, color scale, gain, depth, etc).
7. The ability to describe optimal techniques related to field size, power, gain, contrast for the image interpretation.
8. Knowledge of the elements of the image labeling
9. Explanation of the sonographic findings and differential diagnosis of abdominal pathology
10. Since the intent of the lab examination is for the student to demonstrate the knowledge of the scanning protocol, students are not allowed to ask questions and discuss the scanning procedures with classmates. Reference materials are not allowed.

Midterm / Final Exam Grading System

Midterm and Final Exams will be performed on scheduled days in the presence of the lab instructor.

The length of the examination will depend on the type of the ultrasound protocol.

The score (%) will be determined by acquiring the ratio of the correct / incorrect images acquired and recorded by the student.

Depending on the quantity of the required images of the particular protocol, each image will be valued at certain amount of points.

The points for missed (or completely incorrect) ultrasound images will be subtracted from the total 100% score.

The added score of the correct ultrasound images (according to the protocol requirements) will represent the total examination grade.

To successfully complete this exam, the student must pass it with a total score 70% or better.

Grading Scale

94-100%- A

90-93%- A-

87-89%- B+

84-86%- B

81-83%-B-

78-80%- C+

76-77%- C

74-75%- C-

72-73%- D+

70-71%- D

69%≤- F

Lab Term Grading (30% of the total DI 150 grade)

The term grade is based on: ----Midterm and Final examination grade (25% of the total DI 150 grade),

---Attendance (5% of the total DI 150 grade)

Lab Classes Schedule

Dates	Topics
20-Feb	Holiday
27-Feb	Ultrasound Scanning Protocol : Liver.
6-Mar	Ultrasound Evaluation of the Vascular System of the Liver. Portal Venous System
13-Mar	Ultrasound Scanning Protocol : Gallbladder & Biliary System.
20-Mar	Midterm Exam
27-Mar	Ultrasound Scanning Protocol : Pancreas. Spleen
3-Apr	Ultrasound Scanning Protocol : Kidneys (Part 1)
10-Apr	Ultrasound Scanning Protocol : Kidneys (Part 2) Urinary Bladder
17-Apr	Ultrasound Evaluation of the Abdominal Aorta. Inferior Vena Cava. Full Abdominal Ultrasound Protocol
24-Apr	Final Exam

