

University of Arkansas - Fort Smith
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General Syllabus

ISS 4413 Abdominal Sonography II

Credit Hours: 3 Lecture Hours: 3 Laboratory Hours: 0

Prerequisite: ISS 3203 Abdominal Sonography I

Corequisites: ISS 4403 Pathophysiology and Special Applications, ISS 4434 Clinical Practice III, and ISS 4433 Vascular Sonography II

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Advanced study of human anatomy in the transverse, longitudinal, and coronal planes with emphasis on the organs in the abdomen and pelvic cavity to include technical information and scanning techniques. Extensive study of the disease process and physiological alterations, sonographic methods to visualize adult and pediatric abdomens, normal variants, congenital anomalies, physiology, and related laboratory tests.

B. Additional Information - None

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Analyze laboratory tests and results used to detect urinary tract disease.
2. Evaluate the anatomy and function of the urinary system.
3. Break down the normal variants and pathology associated with the urinary tract.
4. Categorize the disease process and consequent physiological alterations to the anatomical structures found in the abdomen.
5. Evaluate the anatomy and function of the abdominal vascular system.
6. Point out the sonographic techniques used to evaluate the abdominal vessels.

7. Compose and evaluate images of the GI tract based on normal and abnormal anatomy.
8. Evaluate the types of benign and malignant pathology found in the spleen.
9. Outline the scanning protocols for sonographic examinations of the:
 - a. Spleen
 - b. Retroperitoneum and Lymphatic System
 - c. Urinary System
 - d. Abdominal Vasculature
10. Correlate the normal anatomy and relational landmarks of the spleen.
11. Connect the size and primary function of the spleen.
12. Critique the sonographic technique and patterns of the spleen.
13. Correlate the sonographic findings and differential diagnosis of the following:
 - a. Regressive Changes
 - b. Congestion of the Spleen
 - c. Focal Disease
 - d. Diffuse Disease
 - e. Splenic Abscess
 - f. Splenic Infarction
 - g. Trauma
 - h. Splenic Cysts
 - i. Primary Tumors
14. Connect the anatomy and function of the adrenal gland.
15. Analyze pathology and congenital adrenal anomalies.
16. Evaluate the abdominal wall and the anatomy and pathology of various retroperitoneal structures.
17. Evaluate the sonographic appearance of the major structures in the neonatal brain.
18. Connect structural variants with the normal appearance of the neonatal brain.
19. Connect how ultrasound is used in the surgical setting, and how ultrasound is used for needle-guided biopsies, aspirations, and drainage procedures.
20. Evaluate the major structures in the pediatric hip.
21. Break down the sonographic appearance of the pediatric hip.
22. Classify the normal variants of the pediatric hip seen sonographically.
23. Outline the sonographic appearance of some musculoskeletal structures within the body (shoulder, wrist, knee, ankle/foot).
24. Correlate the sonographic appearance of tears, fluid collections, and infections in these musculoskeletal areas of the body.
25. Categorize, sonographically, the appearance of the normal and abnormal neonatal spine and the structures associated with these.

B. University Learning Outcomes.

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will access and evaluate appropriate information through written and electronic means in order to complete their written, oral, and board presentations as part of their senior project. Students will think critically to reach viable solutions to a problem and justify those solutions through extensive study of disease processes, lab values, physiological alterations, and normal variants.

Communication Skills (written and oral)

Students will compose coherent documents appropriate to the intended audience by learning to compose a final report on a sonogram that they have performed. Students will effectively communicate orally in a public setting with fellow students and faculty to appropriately relay clinical information.

III. Major Course Topics

- A. Spleen
- B. Aorta, IVC, and Other Abdominal Vasculature
- C. Urinary System
- D. Retroperitoneum and Lymphatics
- E. Musculoskeletal System
- F. Pediatric Hips
- G. Neonatal Heads
- H. Neonatal Spine
- I. Intra-operative and Interventional Sonography