DMS A110: INTRODUCTION TO SONOGRAPHY

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	122700 - Diagnostic Medical Sonography
Units	1.5 Total Units
Hours	45 Total Hours (Lecture Hours 18; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

This course is a required prerequisite for all students entering the Diagnostic Medical Sonography (DMS) Program. Basic sonographic theory is taught with an emphasis on instrumentation, patient exam presets and scan planes. Basic cross-sectional and sonographic anatomy, as well as scan protocols are taught. PREREQUISITE: BIOL A221 and ALH A010 and ALH A111. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. The student will be able to integrate and analyze foundational knowledge of sonographic anatomy, equipment operation, patient preparation and patient care.

Course Objectives

- 1. Demonstrate how to turn on and off the machine.
- 2. Set-up ultrasound equipment for basic, limited abdominal exam and superficial structures.
- 3. Demonstrate appropriate transducer selection for type of sonographic exam.
- 4. Understand and apply sonographic terms.
- 5. Master and demonstrate scanning planes of the human body.
- 6. Integrate basic general and cross-sectional anatomy with sonographic anatomy
- 7. Scan organs as instructed in correct anatomical planes
- 8. Correctly place patient for exam type.
- 9. Take and store images.
- 10. Understand DMS as an allied health career.
- 11. Describe areas of professional ethics related to patient care.

Lecture Content

I. Equipment A. Power up/power down B. Select correct transducer C. Select appropriate settings for patient D. Adjust machine settings for exam type 1. Gain 2. TGC 3. Depth 4. Orientation 5. Doppler II. Patient Preparation A. Place patient in correct position 1. Supine 2. Prone al,helvetica,sans-serif; font-size: small;"> 3. Left Lateral Decubitus (LLD) 4. Right Lateral Decubitus (RLD) B. Drape patient according to exam type C. Use warm gel and correct amount for exam type D. Brief patient history III. Scan Planes A. Longitudinal B. Sagittal C. Coronal D. Transverse IV. Anatomy A. Abdominal 1. Liver 2. Gallbladder and ducts nb 3. Kidneys, ureters, bladder 4. Pancreas 5. Spleen C. Vascular structures 1. Abdominal aorta a. Celiac trunk and branches b. Superior mesenteric artery 2. Hepatic veins 3. Portal vein 4. Hepatic artery V. Sonographic Terminology related to normal anatomy A. Echogenic B. Isoechoic C. Hyperechoic D. Hypoechoic E. Sonolucent F. Anechoic VI. Strategies for Success in DMS A. Hand-eye coordination B. Learning approaches to anatomy memorization C. Daily studying D. Critical thinking VII. Patient Care A. Ethics B. Privacy C. Related medical terms D. DMS as a healthcare team member

Lab Content

Students will apply lecture material in the laboratory for scanning of the abdominal organs and abdominal vasculature. I. Equipment A. Power up/power down B. Select correct transducer C. Select appropriate settings for patient D. Adjust machine settings for exam type 1. Gain 2. TGC 3. Depth 4. Orientation 5. Doppler II. Patient Preparation A. Place patient in correct position 1. Supine 2. Prone 3. Left Lateral Decubitus (LLD) 4. Right Lateral Decubitus (RLD) B. Drape patient according to exam type C. Use warm gel and correct amount for exam type D. Brief patient history III. Scan Planes A. Longitudinal B. Sagittal C. Coronal D. Transverse IV. Anatomy A. Abdominal organs 1. Liver ial,helvetica,sans-serif; font-size: small;"> 2. Gallbladder and ducts 3. Kidneys, ureters, bladder 4. Spleen 5. Pancreas 6. Diaphragm B. Vascular structures 1. Abdominal aorta a. Celiac trunk and branches b. Superior mesenteric artery 2. Hepatic veins 3. Portal vein 4. Hepatic artery V. Sonographic Terminology related to normal structures al,helvetica,sans-serif; font-size: small;"> A. Echogenic B. Isoechoic C. Hyperechoic D. Hypoechoic E. Sonolucent F. Anechoic

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture, PowerPoint presentations accessed on OCC Learning Management System (LMS) and live scanning demonstrations.

Reading Assignments

Reading from textbook 2 hours per week.

Writing Assignments

No writing assignments will be given.

Out-of-class Assignments

Textbook and lecture note reading 2 hours per week.

Demonstration of Critical Thinking

Class participation as well as short quizzes. Reading will also be assigned.

Required Writing, Problem Solving, Skills Demonstration

Scan tests are given to demonstrate skills.

Eligible Disciplines

Diagnostic medical technology-diagnostic medical sonography, neurodiagnosti...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Curry, R.A. Tempkin, B.B.. Sonography, Introduction to Normal Structure and Function, Fourth ed. Saint Louis, Missouri: Elsevier, 2016