DMS-1401: ABDOMINAL SONOGRAPHY I

Cuyahoga Community College

Viewing: DMS-1401: Abdominal Sonography I

Board of Trustees:
2016-03-31

Academic Term:
2016-08-22

Subject Code
DMS - Diagnostic Medical Sonography

Course Number:
1401

Title:
Abdominal Sonography I

Catalog Description:
Study of adult and pediatric normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of the upper abdomen, peritoneal and retroperitoneal cavity including potential spaces, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature as visualized by ultrasound. Doppler and color Doppler applications for the liver, gallbladder, pancreas, urinary system, gastrointestinal system, portal system, and great vessels. Correlation to other imaging modalities.

Credit Hour(s):
4

Lecture Hour(s):
4

Requisites

Prerequisite and Corequisite
Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

I. ACADEMIC CREDIT

Academic Credit According to the Ohio Department of Higher Education, one (1) semester hour of college credit will be awarded for each lecture hour. Students will be expected to work on out-of-class assignments on a regular basis which, over the length of the course, would normally average two hours of out-of-class study for each hour of formal class activity. For laboratory hours, one (1) credit shall be awarded for a minimum of three laboratory hours in a standard week for which little or no out-of-class study is required since three hours will be in the lab (i.e. Laboratory 03 hours). Whereas, one (1) credit shall be awarded for a minimum of two laboratory hours in a standard week, if supplemented by out-of-class assignments which would normally average one hour of out-of-class study preparing for or following up the laboratory experience (i.e. Laboratory 02 hours). Credit is also awarded for other hours such as directed practice, practicum, cooperative work experience, and field experience. The number of hours required to receive credit is listed under Other Hours on the syllabus. The number of credit hours for lecture, lab and other hours are listed at the beginning of the syllabus. Make sure you can prioritize your time accordingly. Proper planning, prioritization and dedication will enhance your success in this course.

The standard expectation for an online course is that you will spend 3 hours per week for each credit hour.

II. ACCESSIBILITY STATEMENT

If you need any special course adaptations or accommodations because of a documented disability, please notify your instructor within a reasonable length of time, preferably the first week of the term with formal notice of that need (i.e. an official letter from the Student Accessibility Services (SAS) office). Accommodations will not be made retroactively.

For specific information pertaining to ADA accommodation, please contact your campus SAS office or visit online athttp://www.tri-c.edu/accessprograms/. Blackboard accessibility information is available athttp://access.blackboard.com.

Eastern (216) 987-2052 - Voice
Metropolitan (216) 987-4344 – Voice. (216) 987-4048 – TTY.
III. ATTENDANCE TRACKING

Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Eligibility for federal student financial aid is based in part on enrollment status.

Students who do not attend classes for the entire term are required to withdraw from the course(s). Additionally, students who withdraw from a course or stop attending class without officially withdrawing may be required to return all or a portion of their financial aid based on the date of last attendance. Students who do not attend the full session are responsible for withdrawing from the course(s).

Tri-C is responsible for identifying students who have not attended a course before financial aid funds can be applied to students’ accounts.

Therefore, attendance is recorded in the following ways:

• For in-person and blended-learning courses, students are required to attend the course by the 15th day of the semester (or equivalent for terms shorter than five weeks) to be considered attending. Students who have not met all attendance requirements for in-person and blended courses, as described herein, within the first two weeks or equivalent, will be considered not attending.

• For online courses, students are required to login at least two times per week and submit one assignment per week for the first two weeks of the semester, or equivalent to the 15th day of the term. Students who have not met all attendance requirements for online courses, as described herein, within the first two weeks or equivalent, will be considered not attending.

At the conclusion of the first two weeks of a semester or equivalent, instructors report any registered students who have “Never Attended” a course. Those students will be administratively withdrawn from that course. However, after the time period in the previous paragraphs, if a student stops attending a class or wants or needs to withdraw, for any reason, it is the student’s responsibility to take action to withdraw from the course. Students must complete and submit the appropriate Tri-C form by the established withdrawal deadline.

Tri-C is required to ensure that students receive financial aid only for courses that they attend and complete. Students reported for not attending at least one of their registered courses will have all financial aid funds held until confirmation of attendance in registered courses has been verified. Students who fail to complete at least one course may be required to repay all or a portion of their federal financial aid funds and may be ineligible to receive future federal financial aid awards. Students who withdraw from classes prior to completing more than 60 percent of their enrolled class time may be subject to the required federal refund policy.

If illness or emergency should necessitate a brief absence from class, students should confer with instructors upon their return. Students having problems with coursework due to a prolonged absence should confer with the instructor or a counselor.

IV. LEARNING OUTCOMES ASSESSMENT

Occasionally, in addition to submitting assignments to their instructors for evaluation and a grade, students will also be asked to submit completed assignments, called ‘artifacts,’ for assessment of course and program outcomes and the College’s Essential Learning Outcomes (ELOs). The artifacts will be submitted in Blackboard or a similar technology. The level of mastery of the outcome demonstrated by the artifact DOES NOT affect the student’s grade or academic record in any way. However, some instructors require that students submit their artifact before receiving their final grade. Some artifacts will be randomly selected for assessment, which will help determine improvements and support needed to further student success. If you have any questions, please feel free to speak with your instructor or contact the Learning Outcomes Assessment office.

V. CONCEALED CARRY STATEMENT

College policy prohibits the possession of weapons on college property by students, faculty and staff, unless specifically approved in advance as a job-related requirement (i.e., Tri-C campus police officers) or, in accordance with Ohio law, secured in a parked vehicle in a designated parking area only by an individual in possession of a valid conceal carry permit.

As a Tri-C student, your behavior on campus must comply with the student code of conduct which is available on page 29 within the Tri-C student handbook, available at http://www.tri-c.edu/student-resources/documents/studenthandbook.pdf You must also comply with the College’s Zero Tolerance for Violence on College Property available at http://www.tri-c.edu/policies-and-procedures/documents/3354-1-20-10-zero-tolerance-for-violence-policy.pdf

Outcomes

Course Outcome(s):
Assess the indications for and follow the protocols of an ultrasound examination for the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.

Objective(s):
1. List and explain the indications for performing an ultrasound exam for each of the structures visualized in the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.
2. Describe the standard exam scanning protocols for performing an ultrasound exam for each of the structures visualized in the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.

3. Explain the patient exam preparation and its purpose for an ultrasound examination of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature and any variation allowable for age or medical conditions.

Course Outcome(s):
Provide a technical finding of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature ultrasound exam.

Objective(s):
1. Recognize and identify the sonographic appearance of normal anatomic structures of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.
2. Recognize and identify the sonographic appearance of abnormalities, disease, pathology, and pathophysiology of the anatomic structures of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.
3. Explain the process and purpose for ultrasound-guided procedures performed in the abdomen and non-cardiac chest.
4. State the normal measurement values for anatomic structures of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature dependent on patients age.
5. Define the purpose of Doppler and color Doppler applications of the anatomic structures of the peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature.
6. Provide a sonographic impression based on assessing and evaluating pertinent related medical data and image information for proposed peritoneal and retroperitoneal cavities, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature clinical patient scenarios.

Methods of Evaluation:
1. Written tests/quizzes
2. Midterm and final exam
3. Research report
4. Classroom assignments

Course Content Outline:
1. Concepts
   a. Ethics
   b. Protocols
   c. Scope of Practice
   d. Preparation
   e. Critical thinking
   f. Disease processes
   g. Peritoneal and retroperitoneal cavity structures
   h. Noncardiac chest anatomic structures
      i. Gastrointestinal system anatomic structures and landmarks
   j. Urinary system anatomic structures
   k. Major abdominal vascular structures and landmarks
   l. Liver anatomic structures and landmarks
   m. Gallbladder anatomic structures and landmarks
   n. Pancreas anatomic structures and landmarks
   o. Urinary system structures and landmarks
2. Skills
   a. Using critical thinking to correlate patient medical history and current signs and symptoms with the findings of the exam
   b. Completing worksheets
   c. Correlating medical data
   d. Communicating the exam findings
   e. Identifying normal, normal variants, and abnormal sonographic appearance of the peritoneal and retroperitoneal cavity structures
   f. Identifying normal, normal variants, and abnormal sonographic appearance of the non-cardiac chest
   g. Identifying normal, normal variants, and abnormal sonographic appearance of the gastrointestinal system
   h. Identifying normal, normal variants, and abnormal sonographic appearance of the liver
i. Identifying normal, normal variants, and abnormal sonographic appearance of the Gallbladder and biliary system
j. Identifying normal, normal variants, and abnormal sonographic appearance of the major abdominal vascular structures
k. Identifying normal, normal variants, and abnormal sonographic appearance of the pancreas
l. Identifying normal, normal variants, and abnormal sonographic appearance of the urinary tract

3. Issues
   a. Medical ethics
   b. Exam preparation
   c. Physician interaction
   d. Patient interaction
   e. Atypical patients or variability
   f. Knowledge retention
   g. Verbal and non-verbal communication limitations

Topical Outline
1. Abdomino-pelvic cavity
   a. Development
   b. Anatomy, physiology, pathology, and pathophysiology
      i. Peritoneal cavity
      ii. Retroperitoneal cavity
      iii. Potential spaces
   c. Effects of trauma and complications of injury, disease, or pathology
      i. Laceration or rupture
      ii. Intra-abdominal hemorrhage
      iii. Hematoma
      iv. Thrombosis
      v. Abscess
      vi. Ascites
   d. Tests and lab values
   e. Exam indications
   f. Exam protocol and preparation
   g. Normal and abnormal sonographic appearance

2. Major abdominal vascular structures
   a. Anatomy
   b. Physiology
   c. Pathology/pathophysiology
   d. Tests and lab values
   e. Exam indications
   f. Exam protocol and preparation
   g. Normal, normal variants, and abnormal sonographic appearance
   h. Normal measurement values (adult and pediatric)
      i. Doppler exam protocols and values
   j. Aorta
   k. IVC
   l. Hepatic artery and veins
   m. Renal arteries and veins
   n. Mesenteric arteries and veins
   o. Portal venous system
   p. TIPS shunt evaluation

3. Liver
   a. Anatomy
   b. Physiology
   c. Pathology/pathophysiology
   d. Tests and lab values
   e. Exam indications
   f. Exam protocol and preparation
   g. Normal, normal variants and abnormal sonographic appearance
   h. Congenital anomalies and abnormalities
      i. Normal measurement values (adult and pediatric)

4. Gallbladder and biliary system
a. Anatomy
b. Physiology
c. Pathology/pathophysiology
d. Tests and lab values
e. Exam indications
f. Exam protocol and preparation
g. Normal, normal variants and abnormal sonographic appearance
h. Congenital anomalies and abnormalities
i. Normal measurement values (adult and pediatric)

5. Pancreas
a. Anatomy
b. Physiology
c. Pathology/pathophysiology
d. Tests and lab values
e. Exam indications
f. Exam protocol and preparation
g. Normal, normal variants and abnormal sonographic appearance
h. Congenital anomalies and abnormalities
i. Normal measurement values (adult and pediatric)

6. Non-cardiac chest
a. Anatomy
b. Physiology
c. Pathology/pathophysiology
d. Tests and lab values
e. Exam indications
f. Exam protocol and preparation
g. Normal and abnormal sonographic appearance
h. Invasive procedures
i. Thoracentesis

7. Gastrointestinal
a. Anatomy
b. Physiology
c. Pathology/pathophysiology
d. Tests and lab values
e. Exam indications
f. Exam protocol and preparation
g. Normal and abnormal sonographic appearance
h. Normal measurement values (adult and pediatric)

8. Urinary system
a. Development
b. Anatomy
c. Physiology
d. Pathology/Pathophysiology
e. Tests and lab values
f. Exam indications
g. Exam protocol and preparation
h. Congenital anomalies and abnormalities
i. Normal measurement values (adult and pediatric)
j. Doppler exam protocols and values

9. Invasive and Intraoperative Procedures
a. Paracentesis
b. Thoracentesis
c. Biopsy
d. Aspiration

Resources


