

Course Description**SON1111C | Abdominal Sonography 1 | 2.00 credits**

An in-depth course designed to cover all aspects of clinical abdominal ultrasound studies. Topics include gallbladder, liver, and pancreas. Subject matter includes review of normal anatomy and physiology, indications for ultrasound studies, clinical presentation and laboratory data, pathophysiological basis of diseases, sonographic appearance of normal and pathological findings, recognition of adequate images, scanning techniques, and its pitfalls.

Course Competencies

Competency 1: The student will demonstrate an understanding of anatomy and pathophysiologic process of the liver by:

1. Identifying normal and abnormal sonographic appearances of the liver
2. Discussing the clinical significance and manifestations of liver masses
3. Describing the sonographic appearance of intrahepatic and extrahepatic biliary obstruction
4. Identifying the causes of biliary obstruction
5. Identifying the sonographic appearances of hepatocellular diseases
6. Discussing role of Doppler techniques in evaluation of portal hypertension
7. Listing protocol changes in pathological cases

Competency 2: The student will demonstrate an understanding anatomy and pathophysiological processes of the gallbladder by:

1. Recognizing the normal sonographic appearance of gallbladder, cystic duct, hepatic duct common bile duct, and related arterial and venous systems
2. Describing congenital anomalies that affect the gallbladder, hepatic, cystic, and common bile ducts.
3. Labelling diagrams and ultrasound images of the gallbladder, hepatobiliary system, and adjacent structures
4. Discussing production, composition and function of bile
5. Identifying the pertinent laboratory tests and diagnostic procedures for evaluating the function of the biliary tree
6. Recognizing the normal sonographic appearance of the gallbladder and biliary system
7. Differentiating between the normal and abnormal sonographic appearance of the gallbladder
8. Explaining the pathological process in the following identifying the sonographic appearance of gallbladder abnormalities diagnosed by ultrasound
9. Identifying the sonographic appearance of abnormalities of the hepatobiliary tree
10. Identifying pertinent measurements associated with the biliary system and recall normal and abnormal values
11. Listing protocol changes in pathological cases

Competency 3: The student will demonstrate an understanding anatomy and pathophysiological processes of the pancreas by:

1. Describing the various positions and size of the normal pancreas
2. Defining the internal and surface anatomy of the pancreas
3. Labelling diagrams of the cross-sectional anatomy of the pancreas and adjacent structures
4. Recognizing and labelling normal sonographic images of the cross-sectional anatomy of the pancreas and adjacent structures
5. Describing congenital anomalies affecting the pancreas
6. Identifying the enzymes/secretions by explaining the functions of the pancreas
7. Describing the normal echo pattern associated with the pancreas as compared to surrounding organs
8. Identifying the pertinent laboratory tests and other diagnostic procedures to evaluate the function of the pancreas
9. Recognizing the normal sonographic appearance of the pancreas pancreatic duct, bile duct, and adjacent structures
10. Explaining scanning and doppler techniques of the pancreas and its vasculature
11. Differentiate between normal and abnormal sonographic appearances
12. Describing the correct equipment settings appropriate to individual body

Learning Outcomes

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data