

Course Competency

SON 1145L Pediatric Sonography

Course Description

This course is designed to cover aspects of pediatric ultrasound examinations. Topics include: liver, biliary, spleen, renal, adrenal, gastrointestinal, scrotum, and musculoskeletal structures. Subject matter includes: etiology, pathophysiology, clinical presentations, sonographic appearance and differential diagnosis.

Course Competency	Learning Outcomes
<p>Competency 1:The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique , measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the liver by: • Identifying normal anatomy of the liver. • Identifying the sonographic cross-sectional anatomy of the liver. • Identifying and describing the sonographic appearance of the liver. • Discussing the scanning protocol of a pediatric liver ultrasound. • Identifying and describing the sonographic appearance of liver pathology. • Discussing the pathophysiology of liver pathology. • Identifying the differential diagnosis of abnormal ultrasound findings of the liver. • Discussing scanning techniques used in pediatric liver ultrasound. • Discussing the role color Doppler and spectral trace Doppler in liver ultrasound.</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage
<p>Competency 2:The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique , measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the gallbladder and biliary system by: • Identifying normal anatomy of the gallbladder and biliary system. • Identifying the sonographic cross-sectional anatomy of the gallbladder and biliary</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage

<p>system. • Identifying and describing the sonographic appearance of the gallbladder and biliary system. • Discussing the scanning protocol of a pediatric gallbladder and biliary system. • Identifying and describing the sonographic appearance of gallbladder and biliary system Pathology. • Discussing the pathophysiology of gallbladder and biliary system Pathology. • Identifying the differential diagnosis of abnormal ultrasound findings of the gallbladder and biliary system. • Discussing scanning techniques used in pediatric ultrasound of the gallbladder and biliary system. • Discussing the role color Doppler and spectral trace Doppler in pediatric sonography of the gallbladder and biliary system.</p>	
<p>Competency 3: The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique, measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the kidneys by: • Identifying normal anatomy of the kidneys. • Identifying the sonographic cross-sectional anatomy of the kidneys. • Identifying and describing the sonographic appearance of the kidneys. • Discussing the scanning protocol of the kidneys. • Discussing the pathophysiology of renal pathology. • Identifying the differential diagnosis of abnormal ultrasound findings of the kidneys. • Discussing scanning techniques used in pediatric renal ultrasound. • Discussing the role color Doppler and spectral trace Doppler in renal ultrasound.</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Aesthetic / Creative Activities 5. Computer / Technology Usage
<p>Competency 4: The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique, measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the adrenal gland by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage

<p>Competency 5:The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique , measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the spleen by:</p> <ul style="list-style-type: none"> • Identifying normal anatomy of the spleen. • Identifying the sonographic cross-sectional anatomy of the spleen. • Identifying and describing the sonographic appearance of the spleen. • Discussing the scanning protocol of ultrasound imaging the spleen. • Discussing the pathophysiology of spleen pathology. • Identifying the differential diagnosis of abnormal ultrasound findings of spleen. • Discussing scanning techniques used in pediatric ultrasound of the spleen. • Discussing the role color Doppler and spectral trace Doppler in ultrasound of the spleen. 	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage
<p>Competency 6:The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique , measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the male genitourinary system by:</p> <ul style="list-style-type: none"> • Identifying normal anatomy of the male genitourinary system. • Identifying the sonographic cross-sectional anatomy of the male genitourinary system. • Identifying and describing the sonographic appearance of the male genitourinary system. • Discussing the scanning protocol of ultrasound imaging the male genitourinary system. • Identifying and describing the sonographic appearance of male genitourinary system. • Discussing the pathophysiology of abnormal findings of the male genitourinary system. • Identifying the differential diagnosis of abnormal ultrasound findings of male. genitourinary system. • Discussing scanning techniques used in pediatric ultrasound of the male genitourinary system. • Discussing the role color Doppler and spectral trace Doppler in ultrasound of the male 	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage

<p>genitourinary system. • Differentiate complete, incomplete, and intermittent testicular torsion.</p>	
<p>Competency 7: The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique, measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the gastrointestinal system by:</p> <ul style="list-style-type: none"> • Describing and identifying the sonographic appearance of normal gastrointestinal structures identified in pediatric ultrasound. • Describing and identifying the sonographic appearance of hypertrophied pyloric stenosis. • Describing and identifying the sonographic appearance of appendicitis. • Describing and identifying the sonographic appearance of intussusception. • Describing and identifying the sonographic appearance of mesenteric or omental cysts. • Describing and identifying the sonographic appearance of duplication cysts of the bowel. • Describing and identifying the sonographic appearance of duodenal atresia. • Describing and identifying the sonographic appearance of meconium peritonitis. • Discussing the differential diagnosis for pathologies seen in pediatric sonography of the gastrointestinal system. • Discussing and recognizing the ultrasound protocol of pediatric sonography of the gastrointestinal system. • Describing scanning techniques and ultrasound machine controls and modalities used in pediatric ultrasound of the gastrointestinal system. • Identifying the sonographic cross-sectional anatomy of the gastrointestinal system. • Discussing the pathophysiology of abnormal findings of the gastrointestinal system. • Identifying the differential diagnosis of abnormal ultrasound findings of gastrointestinal system. • Discussing scanning techniques used in pediatric ultrasound of the gastrointestinal system. • Discussing the role of color Doppler and spectral trace Doppler in ultrasound of the gastrointestinal system. 	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage

<p>Competency 8:The student will demonstrate knowledge of the physiology, pathophysiology, sonographic technique , measurements, sonographic appearances, and Doppler patterns, where applicable, in both normal and abnormal structures in pediatric sonography of the musculoskeletal by: • Identifying normal anatomy of the neonatal hip. • Identifying the sonographic cross-sectional anatomy of the neonatal hip. • Identifying and describing the sonographic appearance of the neonatal hip. • Discussing the scanning protocol of ultrasound imaging the neonatal hip. • Discussing the pathophysiology of abnormal neonatal hip. • Identifying the differential diagnosis of abnormal ultrasound findings of neonatal hip. • Discussing scanning techniques used in pediatric ultrasound of the neonatal hip.</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage

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