Abdomen Examination Content Outline

(Outline Summary)

#	Domain	Subdomain	Percentage
1	**Anatomy, Perfusion, and Function**	• Assess the physical characteristics of anatomic structures, including normal anatomy, anatomic variants, and congenital anomalies. • Assess perfusion and function of anatomic structures	**30%**
2	**Pathology, Vascular Abnormalities, Trauma, and Postoperative Anatomy**	• Assess anatomic structures for pathology • Assess anatomic structures for vascular abnormalities • Assess anatomic structures for trauma-related abnormalities • Assess aspects related to postoperative anatomy	**39%**
3	**Abdominal Physics**	• Apply concepts of equipment and image optimization • Apply concepts of imaging artifacts	**7%**
4	**Clinical Care, Practice, and Quality Assurance**	• Incorporate clinical data with performed study • Incorporate clinical standards and guidelines into the performed examination • Obtain accurate measurements • Assist and support during procedures	**24%**

(Detailed Outline)

1	**Anatomy, Perfusion, and Function**
1.A	**Assess the physical characteristics of anatomic structures, including normal anatomy, anatomic variants, and congenital anomalies.**
1.A.1	Biliary system
1.A.2	Liver
1.A.3	Pancreas
1.A.4	Urinary system
1.A.5	Spleen and lymphatic system (including lymph nodes)
1.A.6	Retroperitoneum (including great vessels, branches, and adrenal gland)
1.A.7	Gastrointestinal system
1.A.8	Peritoneal cavity (including bowel and appendix)
1.A.9	Superficial structures (including abdominal wall, fascia, and subcutaneous tissue)
1.A.10	Pleural space
1.A.11	Breast (including tissue layers, and axillary regions)
1.A.12	Neck (including thyroid, parathyroid, salivary glands, and lymph nodes)
1.A.13	Scrotum
1.A.14	Penis
1.B	**Assess perfusion and function of anatomic structures**
1.B.1	Biliary system
1.B.2	Liver
1.B.3	Urinary system
1.B.4	Spleen and lymphatic system (including lymph nodes)
1.B.5	Retroperitoneum (including great vessels, branches, and adrenal gland)
1.B.6	Gastrointestinal system
1.B.7	Superficial structures (including abdominal wall and subcutaneous tissue)
1.B.8	Pleural space
1.B.9	Neck (including thyroid, parathyroid, salivary glands, and lymph nodes)
1.B.10	Scrotum
2	**Pathology, Vascular Abnormalities, Trauma, and Postoperative Anatomy**

2.A	**Assess anatomic structures for pathology**
2.A.1	Biliary system for infection, masses, metastatic disease, obstructions, etc.
2.A.2	Liver for hepatitis, fatty infiltration, cirrhosis, neoplasm, abscess, cyst, etc.
2.A.3	Pancreas for infection, masses, obstruction, etc.
2.A.4	Urinary system for masses, obstruction, parenchymal disease, infection, etc.
2.A.5	Spleen for splenomegaly, parenchymal changes, masses, etc.
2.A.6	Adrenal gland for masses, hemorrhage, etc.
2.A.7	Retroperitoneal lymph nodes and adrenal glands for abnormalities, etc.
2.A.8	Gastrointestinal system for masses, obstruction, fluid, intussusception, inflammation, etc.
2.A.9	Superficial structures (including abdominal wall, hernia, and subcutaneous tissue) for foreign bodies, infection, fluid, masses, etc.
2.A.10	Pleural space for fluid
2.A.11	Breast for infection and abscess
2.A.12	Neck (including thyroid, parathyroid, salivary glands, and lymph nodes) for diffuse parenchymal disease, inflammation, masses, etc.
2.A.13	Prostate for parenchymal disease or masses, for example, benign prostatic hypertrophy.
2.A.14	Scrotum for fluids, hernia, masses, infection, parenchymal disease, etc.
2.B	**Assess anatomic structures for vascular abnormalities**
2.B.1	Liver for Budd-Chiari syndrome, arteriovenous fistula, portal vein thrombosis, collateralization, etc.
2.B.2	Urinary system for renal artery stenosis, arteriovenous fistulas, etc.
2.B.3	Spleen and lymphatic system (including lymph nodes)
2.B.4	Retroperitoneum (including great vessels and branches)
2.B.5	Scrotum for torsion, varicocele, etc.
2.C	**Assess anatomic structures for trauma-related abnormalities**
2.C.1	Hepatic system
2.C.2	Urinary system
2.C.3	Spleen
2.C.4	Superficial structures (including abdominal wall and subcutaneous tissue)
2.C.5	Focused assessment for free fluid related to traumatic events

2.C.6	Scrotum
2.C.7	Penis
2.D	**Assess aspects related to postoperative anatomy**
2.D.1	Anatomy of transplanted organs
2.D.2	Perfusion and function of transplanted organs
2.D.3	Complications related to organ transplants
2.D.4	Postsurgical complications
2.D.5	Implanted medical devices (for example: trans jugular intrahepatic portosystemic shunt [TIPS])
3	**Abdominal Physics**
3.A	**Apply concepts of equipment and image optimization**
3.A.1	Select appropriate transducer and presets (for example: curvilinear, linear, phased array)
3.A.2	Optimize two-dimensional, real-time, gray-scale imaging (for example: B-mode, compound, harmonic)
3.A.3	Optimize Doppler (for example: color, power, pulsed wave)
3.B	**Apply concepts of imaging artifacts**
3.B.1	Appropriately assess and correct artifacts of gray-scale imaging (for example: shadowing, resonance, comet tail)
3.B.2	Appropriately assess and correct artifacts of Doppler imaging (for example: aliasing, twinkle, spectral broadening, harmonics)
4	**Clinical Care, Practice, and Quality Assurance**
4.A	**Incorporate clinical data with performed study**
4.A.1	Assess indications for examination requested
4.A.2	Assess relevant clinical lab values for examination being performed
4.A.3	Assess relevant clinical data, including history, examinations, and patient signs and symptoms.
4.A.4	Correlate ultrasound findings with previous sonographic results
4.A.5	Evaluate images from other imaging modalities, for example, computed tomography, magnetic resonance imaging, nuclear medicine, and X-ray.
4.A.6	Apply ergonomics principles to prevent musculoskeletal injury
4.B	**Incorporate clinical standards and guidelines into the performed examination**
4.B.1	Communicate effectively with the patient, physician, and others, including communication of findings that require immediate action
4.B.2	Inform the patient or referring practitioner about examination preparations, for example, fasting

	for biliary imaging.
4.B.3	Maintain and protect patient confidentiality and privacy
4.B.4	Modify the examination based on the patient's condition and/or sonographic findings.
4.B.5	Use multiple patient positions and scan planes to evaluate anatomic structures
4.C	**Obtain accurate measurements**
4.C.1	Obtain measurements of anatomic structures
4.C.2	Obtain measurements of Doppler waveforms
4.C.3	Obtain measurements using elastography techniques, as appropriate, for example, liver fibrosis measurements.
4.D	**Assist and support during procedures**
4.D.1	Perform preprocedural processes and steps.
4.D.2	Provide ultrasound guidance for procedures
4.D.3	Evaluate for postprocedural changes and complications
4.D.4	Use contrast-enhanced ultrasound (CEUS), as appropriate, within facility policies and procedures.

Knowledge, Skills, and Abilities: *The following is a list of the foundational knowledge, skills, and abilities required to complete the tasks listed in the content outline.*
Ability to integrate clinical history, exam indications, laboratory data, and prior imaging with abdominal sonographic findings to identify normal structures, variants, and pathology.
Knowledge of abdominal and retroperitoneal anatomy, including organ morphology, spatial relationships, and associated vascular structures.
Knowledge of organ perfusion, blood flow dynamics, and hemodynamic principles as they relate to grayscale and Doppler appearances of abdominal organs and vessels.
Ability to recognize sonographic appearances of abdominal pathology, vascular abnormalities, trauma, postoperative changes, transplanted organs, and implanted devices.
Knowledge of ultrasound physics, image formation, and system instrumentation necessary to obtain diagnostic abdominal images and understand examination limitations.
Ability to optimize grayscale and Doppler images by appropriate selection and adjusting transducers, presets, and system controls, and by recognizing and managing common artifacts.
Ability to perform systematic, comprehensive and focused abdominal ultrasound examinations, adapting protocols and techniques to patient condition, body habitus, and clinical urgency.
Ability to provide patient-centered care during abdominal ultrasound examinations, including appropriate communication, exam preparation, consent within scope, comfort measures, and timely communication of urgent findings.
Knowledge of infection control, patient safety, ergonomic principles, and quality assurance practices relevant to abdominal sonography and the ability to apply them consistently.
Ability to assist with and, where within scope, perform ultrasound-guided abdominal procedures and to recognize and document immediate post-procedural and postoperative sonographic changes and potential complications.