The SonoSim Ultrasound Training Solution in Accordance with CAAHEP's General Learning Concentration Curriculum Standards

In 2011, a multidisciplinary review board led by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) came together to revise the Standards and Guidelines for the Accreditation of Educational Programs in Diagnostic Medical Sonography. According to CAAHEP, "These accreditation Standards and Guidelines are the minimum standards of quality used in accrediting programs that prepare individuals to enter the Diagnostic Medical Sonography profession." The award-winning, patented SonoSim Ultrasound Training Solution assists DMS programs in fulfilling these curriculum requirements through an ecosystem of **cloud-based courses, knowledge assessments, interactive SonoSimulator® scanning cases, performance tracking, and access to real-patient pathology.**

General Learning Concentration Curriculum Requirements Abdomen, Obstetric, Gynecologic, Superficial Parts, and Other Appropriate Areas		
Curriculum Requirements	**SonoSim Courses & Lessons**	**Relevant SonoSimulator Cases**
Demonstrate the ability to perform sonographic examinations of the below regions/structures according to protocol guidelines established by national professional organizations utilizing real-time equipment with both transabdominal and endocavitary transducers, and Doppler display modes:		
Abdomen	*Adrenal Glands, Aorta/IVC, Biliary Tree, GI Tract, Liver, Pancreas, Renal, and Spleen Anatomy & Physiology:* All Lessons *Intestinal/Biliary & Renal Core Clinical:* All Lessons	*Adrenal Glands, Aorta/IVC, Biliary Tree, GI Tract, Liver, Pancreas, Renal, and Spleen Anatomy & Physiology Cases* *Intestinal/Biliary & Renal Core Clinical Cases* *Abdomen & Genitourinary Challenge Cases* *DMS Abdominal Aorta, Liver Abdomen, Liver Vascular, Mesenteric Artery, and Renal Artery Protocol Cases*
Superficial structures	*Introduction to MSK, Ankle, Elbow, Foot, Hand & Finger, Hip, Knee, Shoulder, Wrist, Soft Tissue, Scrotum, and Thyroid Anatomy & Physiology:* All Lessons *Musculoskeletal & Soft Tissue Core Clinical:* All Lessons	*Introduction to MSK, Ankle, Elbow, Foot, Hand & Finger, Hip, Knee, Shoulder, Wrist, Soft Tissue, Scrotum, and Thyroid Anatomy & Physiology Cases* *Musculoskeletal & Soft Tissue Core Clinical Cases* *Musculoskeletal Challenge Cases* *All DMS Ankle Protocol Cases* *DMS Foot Protocol Cases*
Noncardiac chest	*Breast and Lungs Anatomy & Physiology:* All Lessons *Pulmonary Core Clinical:* All Lessons *Advanced Pediatric Lung Sonography:* All Lessons	*Breast and Lungs Anatomy & Physiology Cases* *Pulmonary Core Clinical Cases* *Advanced Pediatric Lung Sonography Cases*
Gravid pelvis	*Six-Step Obstetric Examination:* All Lessons *First-Trimester Pregnancy:* All Lessons *Second- & Third-Trimester Pregnancy – Part I & II:* All Lessons *OB/GYN Core Clinical:* All Lessons	*OB/GYN Core Clinical Cases* *Six-Step Obstetric Examination Cases* *First-Trimester Pregnancy Cases* *Second- & Third-Trimester Pregnancy – Part I & II Cases* *OB Challenge Cases* *SonoSim LiveScan® Early Stage Pregnancy, Late Stage Pregnancy, and Six-Step Obstetric Examination Cases* *DMS Detailed First-Trimester Protocol Cases [Coming Soon]* *DMS Standard First-Trimester Protocol Cases*
Nongravid pelvis	*Bladder, Female Pelvis, and Prostrate Anatomy & Physiology:* All Lessons *Bladder & OB/GYN Core Clinical:* All Lessons *OB/GYN Core Clinical:* All Lessons *GYN Normal Uterus, Abnormal Uterus – Part I & II, Normal Adnexa, and Nonmalignant & Malignant Adnexal Conditions:* All Lessons	*All DMS GYN Protocol Cases* *Bladder, Female Pelvis, and Prostate Anatomy & Physiology Cases* *OB/GYN Core Clinical Cases* *Genitourinary Challenge Cases* *GYN Normal Uterus, Abnormal Uterus – Part I & II, Normal Adnexa, and Nonmalignant & Malignant Adnexal Conditions Cases*

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Recognize and identify the sonographic appearance of normal anatomic structures, including anatomic variants and normal Doppler patterns:		
Liver	*Liver Anatomy & Physiology:* All Lessons	*Liver Anatomy & Physiology Cases* *DMS Liver Abdomen & Liver Vascular Protocol Cases*
Biliary system	*Biliary Tree Anatomy & Physiology:* All Lessons	*Biliary Tree Anatomy & Physiology Cases*
Pancreas	*Pancreas Anatomy & Physiology:* All Lessons	*Pancreas Anatomy & Physiology Cases*
Urinary tract	*Bladder and Renal Anatomy & Physiology:* All Lessons	*Bladder and Renal Anatomy & Physiology Cases* *DMS Bladder Protocol Cases*
Adrenal glands	*Adrenal Glands Anatomy & Physiology:* All Lessons	*Adrenal Glands Anatomy & Physiology Cases*
Spleen	*Spleen Anatomy & Physiology:* All Lessons	*Spleen Anatomy & Physiology Cases*
Prevertebral vessels	*Aorta/IVC, Biliary Tree, Liver, Pancreas, Renal, and Spleen Anatomy & Physiology:* All Lessons	*Aorta/IVC, Biliary Tree, Liver, Pancreas, Renal, and Spleen Anatomy & Physiology Cases* *SonoSim LiveScan® Hepatobiliary & Genitourinary Cases* *DMS Abdominal Aorta, Aortic Iliac Artery, Liver Abdomen, Liver Vascular, Mesenteric Artery, and Renal Arteries Protocol Cases*
Peritoneal cavity, including potential spaces	*FAST:* RUQ Views, LUQ Views *Paracentesis*	*FAST Cases*
Gastrointestinal tract	*GI Tract Anatomy & Physiology:* All Lessons	*GI Tract Anatomy & Physiology Cases*
Noncardiac chest	*Breast and Lungs Anatomy & Physiology:* All Lessons	*Breast and Lungs Anatomy & Physiology Cases*
Neck	*Cerebrovascular, Thyroid, and Upper Airway Anatomy & Physiology:* All Lessons	*Cerebrovascular, Thyroid, and Upper Airway Anatomy & Physiology Cases*
Breast	*Breast Anatomy & Physiology:* All Lessons	*Breast Anatomy & Physiology Cases*
Scrotum	*Scrotum Anatomy & Physiology:* All Lessons	*Scrotum Anatomy & Physiology Cases*
Prostate	*Prostate Anatomy & Physiology:* All Lessons	*Prostate Anatomy & Physiology Cases*
Extremities	*Ankle, Elbow, Foot, Hand & Finger, Knee, and Wrist Anatomy & Physiology:* All Lessons *Arm-Arterial & Arm-Venous:* All Lessons *Leg-Arterial & Leg-Venous:* All Lessons	*Ankle, Elbow, Foot, Hand & Finger, Knee, and Wrist Anatomy & Physiology Cases* *Arm-Arterial & Arm-Venous Cases* *Leg-Arterial & Leg-Venous Cases* *DMS Ankle , Foot, Upper Extremity Venous, Upper Extremity Arterial, Lower Extremity Venous, and Lower Extremity Arterial Protocol Cases*
Brain and spinal cord	*Cerebrovascular and Spine Anatomy & Physiology:* All Lessons *Advanced Neonatal & Infant Neurosonography:* All Lessons	*Cerebrovascular and Spine Anatomy & Physiology Cases* *Advanced Neonatal & Infant Neurosonography Cases* *SonoSim Livescan® Neonatal & Infant Neurosonography Cases* *DMS Extracranial Cerebrovascular Protocol Cases*
Musculoskeletal	*Introduction to MSK, Ankle, Elbow, Foot, Hand & Finger, Hip, Knee, Shoulder, and Wrist Anatomy & Physiology:* All Lessons	*Introduction to MSK, Ankle, Elbow, Foot, Hand & Finger, Hip, Knee, Shoulder, and Wrist Anatomy & Physiology Cases* *All DMS Ankle Protocol Cases* *DMS Foot Protocol Cases*
Recognize, identify, and appropriately document the abnormal sonographic and Doppler patterns of disease processes, pathology, and pathophysiology of the structures listed below:		
Liver	--	*SonoSim LiveScan® Hepatobiliary Cases*
Biliary system	*Intestinal/Biliary Core Clinical:* Introduction, Gallbladder Evaluation, Common Bile Duct Evaluation, Summary	*Intestinal/Biliary Core Clinical Cases* *Abdomen Challenge Cases* *SonoSim LiveScan® Hepatobiliary Cases*

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Pancreas	--	*SonoSim LiveScan® Hepatobiliary Cases*
Urinary tract	*Bladder & Renal Core Clinical:* All Lessons	*Bladder & Renal Core Clinical Cases* *Genitourinary Challenge Cases* *SonoSim LiveScan® Genitourinary Cases*
Adrenal glands	--	*SonoSim LiveScan® Genitourinary Cases*
Spleen		*eFAST, FAST, & RUSH Cases* *SonoSim LiveScan® Critical Care, Hepatobiliary, & Trauma Care Cases*
Prevertebral vessels	*Aorta/IVC Core Clinical:* All Lessons	*Aorta/IVC Core Clinical Cases* *SonoSim LiveScan® Hepatobiliary & Genitourinary Cases*
Peritoneal cavity, including potential spaces	*FAST:* Case Studies *Paracentesis*	*FAST Cases* *Paracentesis Cases*
Gastrointestinal tract	*Intestinal/Biliary Core Clinical:* Introduction, Imaging the Intestines, Pathological Gas, Small Bowel Obstruction, Appendicitis, Intussusception, Summary	*Intestinal/Biliary Core Clinical Cases*
Noncardiac chest	*Pulmonary Core Clinical:* All Lessons *Advanced Pediatric Lung Sonography:* All Lessons	*Pulmonary Core Clinical Cases* *Advanced Pediatric Lung Sonography Cases*
Neck	--	*Airway Core Clinical Cases*
Prostate	--	*Bladder & eFAST Core Clinical Cases* *SonoSim LiveScan® Trauma Care & Genitourinary Cases*
Extremities	*Musculoskeletal, Soft Tissue, & DVT Core Clinical:* All Lessons	*Musculoskeletal, Soft Tissue, & DVT Core Clinical Cases* *Musculoskeletal Challenge Cases*
Musculoskeletal	*Musculoskeletal & Soft Tissue Core Clinical:* All Lessons	*Musculoskeletal & Soft Tissue Core Clinical Cases* *Musculoskeletal Challenge Cases*
Sonographic and Doppler patterns in clinical diseases (in the body regions listed above) that may occur in the following categories:		
Iatrogenic	*Airway Core Clinical:* Imaging Adjuncts, Endotracheal Tube Localization, Endotracheal Intubation Confirmation *Pulmonary Core Clinical:* Pneumothorax Rule-Out, Imaging Adjuncts, Imaging Artifacts, Pneumothorax Rule-In *Pericardiocentesis, Paracentesis, & Thoracentesis* *US-Guided Internal Jugular Vein Cannulation, Subclavian Vein Cannulation, & Femoral Line Placement:* Complications *Peripheral Venous Access:* Technical Tips & Pitfalls, Summary	*Airway and Pulmonary Core Clinical Cases* *Pericardiocentesis, Paracentesis, and Thoracentesis Cases* *US-Guided Internal Jugular Vein Cannulation, Subclavian Vein Cannulation, and Femoral Line Placement Cases* *Peripheral Venous Access Cases*
Degenerative	*Aorta/IVC Core Clinical:* Aortic Case Studies *Bladder Core Clinical:* Case Pathologies	*Aorta/IVC and Bladder Core Clinical Cases*
Inflammatory	*Intestinal/Biliary Core Clinical:* Appendicitis, Gallbladder Evaluation, Common Bile Duct Evaluation *Musculoskeletal Core Clinical:* Muscle Evaluation, Effusion Evaluation *Soft Tissue Core Clinical:* Cellulitis and Abscess Imaging, Advanced Abscess Evaluation, Peritonsillar Abscess	*Intestinal/Biliary, Musculoskeletal, and Soft Tissue Core Clinical Cases* *Abdomen Challenge Cases* *SonoSim LiveScan® Hepatobiliary Cases*

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Traumatic	*Bladder Core Clinical: Case Pathologies* *eFAST & FAST:* All Lessons *Musculoskeletal Core Clinical:* Tendon Evaluation, Shoulder Dislocation, Bone Evaluation *Ocular Core Clinical:* Ocular Trauma *Pulmonary Core Clinical:* Pneumothorax Rule-Out, Imaging Adjuncts, Imaging Artifacts, Pneumothorax Rule-In *Soft Tissue Core Clinical:* Foreign Bodies, Foreign Body Removal Techniques	*Bladder, Musculoskeletal, Pulmonary, and Ocular Core Clinical Cases* *eFAST & FAST Cases* *Pediatric Challenge Cases* *Core Clinical Cases* *Musculoskeletal Challenge Cases* *SonoSim LiveScan® Trauma Care Cases*
Neoplastic	*Bladder & Renal Core Clinical:* Case Pathologies/Case Studies	*Bladder & Renal Core Clinical Cases* *Abdomen Challenge Cases* *Musculoskeletal Challenge Cases* *SonoSim LiveScan® Genitourinary Cases*
Infectious	*Bladder Core Clinical:* Case Pathologies *Pulmonary Core Clinical:* Alveolar Interstitial Syndrome *Advanced Pediatric Lung Sonography:* Sonographic Anatomy, Case Studies	*Pulmonary Core Clinical Cases* *Advanced Pediatric Lung Sonography Cases* *Abdomen Challenge Cases* *Genitourinary Challenge Cases*
Obstructive	*Bladder Core Clinical:* Case Pathologies *DVT Core Clinical:* All Lessons *Intestinal/Biliary Core Clinical:* Small Bowel Obstruction, Gallbladder Evaluation, Common Bile Duct Evaluation *Renal Core Clinical:* Obstructive Uropathy, Case Studies	*Bladder Core Clinical Cases* *DVT Core Clinical Cases* *Intestinal/Biliary Core Clinical Cases* *Renal Core Clinical Cases* *Abdomen Challenge Cases* *Pediatric Challenge Cases* *SonoSim LiveScan® Hepatobiliary & Genitourinary Cases*
Congenital	*Bladder Core Clinical:* Case Pathologies	--
Metabolic	*Pancreas Anatomy & Physiology:* Pancreas Physiology	*Abdomen Challenge Cases*
Recognize and identify the sonographic appearance of normal anatomic structures of the female pelvis, including anatomic variants and normal Doppler patterns:		
Reproductive system, pelvic muscles, suspensory ligaments, peritoneal spaces, & pelvic vasculature	*Female Pelvis Anatomy & Physiology:* All Lessons *GYN Normal Uterus:* All Lessons *GYN Abnormal Uterus – Part I:* Congenital Uterine Malformations *GYN Normal Adnexa:* All Lessons *GYN Nonmalignant Adnexal Conditions:* Adnexal Anatomy, Ovarian Cysts	*Female Pelvis Anatomy & Physiology Cases* *GYN Normal Uterus, Abnormal Uterus – Part I, Normal Adnexa, and Nonmalignant Adnexal Conditions Cases* *GYN Challenge Cases* *All DMS GYN Protocol Cases*
Recognize and identify the sonographic appearance of normal maternal, embryonic, and fetal anatomic structures during the first, second, and third trimesters:		
Sectional anatomy	*Six-Step Obstetric Examination:* Sonographic Anatomy & Technique, Case Study *First-Trimester Pregnancy:* First-Trimester Pregnancy Ultrasound *Second- & Third-Trimester Pregnancy – Part I:* Basic Fetal Anatomy	*Six-Step Obstetric Examination Cases* *First-Trimester Pregnancy Cases* *Second- & Third-Trimester Pregnancy – Part I & II Cases* *OB Challenge Cases* *SonoSim LiveScan® Six-Step Obstetric Examination Cases* *DMS Standard First-Trimester Protocol, Detailed First-Trimester Protocol – Biometry, Detailed First-Trimester Protocol – Crown-Rump Length, and Detailed First-Trimester Protocol – Fetal Abdomen Cases*
Pertinent measurement techniques	*Six-Step Obstetric Examination:* Sonographic Anatomy & Technique, Imaging Tips & Pitfalls, Case Study *First-Trimester Pregnancy:* Pregnancy Dating Using Ultrasound *Second- & Third-Trimester Pregnancy – Part I:* Fetal Biometry & Pregnancy Dating	

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Doppler applications	*First-Trimester Pregnancy:* General Considerations, Pathologic Conditions *Second- & Third-Trimester Pregnancy – Part II:* Assessment of Extrafetal Anatomy; Twin Gestation; Placental Evaluation; Fetal Weight, Intrauterine Growth Restriction, & Fetal Macrosomia	*Six-Step Obstetric Examination Cases* *Second- & Third-Trimester Pregnancy – Part II Cases* *OB Challenge Cases* *SonoSim LiveScan® Six-Step Obstetric Examination Cases* *DMS Standard First-Trimester Protocol, Detailed First-Trimester Protocol – Biometry, Detailed First-Trimester Protocol – Crown-Rump Length, and Detailed First-Trimester Protocol – Fetal Abdomen Cases*
Recognize, identify, and appropriately document the sonographic appearance of:		
Gynecologic disease processes, pathology, & pathophysiology	*All Advanced GYN Courses*	*All Advanced GYN Cases* *GYN Challenge Cases*
Abnormal gynecologic sonographic patterns:		
Iatrogenic	*GYN Abnormal Uterus – Part II:* Tamoxifen Effect on Endometrium	--
Neoplastic	*GYN Abnormal Uterus – Part I:* Leiomyoma *GYN Abnormal Uterus – Part II:* Endometrial Polyps & Submucosal Leiomyomas, Endometrial Cancer & Endometrial Hyperplasia *GYN Nonmalignant & Malignant Adnexal Conditions:* All Lessons	*GYN Abnormal Uterus – Part II Cases* *GYN Nonmalignant & Malignant Adnexal Conditions Cases*
Congenital	*GYN Abnormal Uterus – Part I:* Congenital Uterine Malformations	*GYN Abnormal Uterus – Part I Cases*
Contraceptive devices	*GYN Abnormal Uterus – Part I:* Localization of Intrauterine Devices	*GYN Normal Uterus, Abnormal Uterus - Part I, Normal Adnexa, and Nonmalignant & Malignant Adnexal Conditions Cases*
Doppler applications	*All Advanced GYN Courses*	*All Advanced GYN Cases*
Recognize, identify, and appropriately document the sonographic appearance of:		
Obstetric abnormalities, disease, pathology, and pathophysiology	*First-Trimester Pregnancy:* Pathologic Conditions *Second- & Third-Trimester Pregnancy – Part II:* Placental Evaluation; Amniotic Fluid Assessment; Biophysical Profile; Fetal Weight, Intrauterine Growth Restriction, & Fetal Macrosomia	*OB/GYN Core Clinical Cases* *First-Trimester Pregnancy Cases* *Second- & Third-Trimester Pregnancy – Part I & II Cases* *OB/GYN Challenge Cases*
Abnormal sonographic characteristics in pregnancy:		
Placenta	*Second- & Third-Trimester Pregnancy – Part II:* Placental Evaluation	*Second- & Third-Trimester Pregnancy – Part II Cases*
Congenital/genetic anomalies	*GYN Abnormal Uterus – Part I:* Congenital Uterine Malformations *Second- & Third-Trimester Pregnancy – Part I:* Basic Fetal Anatomy	*GYN Abnormal Uterus – Part I Cases* *OB/GYN Challenge Cases*
Growth abnormalities	*Second- & Third-Trimester Pregnancy – Part II:* Fetal Weight, Intrauterine Growth Restriction, & Fetal Macrosomia	--
Amniotic fluid	*Second- & Third-Trimester Pregnancy – Part II:* Amniotic Fluid Assessment	
Viability	*First-Trimester Pregnancy:* First-Trimester Pregnancy Ultrasound *Second- & Third-Trimester Pregnancy – Part II:* Biophysical Profile	*OB/GYN Challenge Cases*
Multiple gestation	*Six-Step Obstetric Examination:* Sonographic Anatomy & Technique, Imaging Tips & Pitfalls *Second- & Third-Trimester Pregnancy – Part II:* Twin Gestation	*OB/GYN Core Clinical Cases* *Six-Step Obstetric Examination Cases* *Second- & Third-Trimester Pregnancy – Part II Cases* *SonoSim LiveScan® Six-Step Obstetric Examination Cases*

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Fetal monitoring	*First-Trimester Pregnancy:* First-Trimester Pregnancy Ultrasound *Second- & Third-Trimester Pregnancy – Part II:* Biophysical Profile *Second- & Third-Trimester Pregnancy – Part II:* Fetal Weight, Intrauterine Growth Restriction, & Fetal Macrosomia	--
Demonstrate knowledge and understanding of the role of the sonographer in:		
Performing interventional/ invasive procedures	*Introduction to US-Guided Procedures:* All Lessons *Acromioclavicular Joint Injection & Aspiration:* All Lessons *Biceps Tendon Sheath Injection:* All Lessons *Paracentesis & Thoracentesis:* All Lessons *US-Guided Internal Jugular Cannulation, Subclavian Cannulation, & Femoral Line Placement:* All Lessons *Peripheral Venous Access:* All Lessons *Glenohumoral Joint Injection & Aspiration:* All Lessons *Subacromial-Subdeltoid Bursa Injection & Aspiration:* All Lessons *Tibiotalar Joint Injection & Aspiration:* All Lessons	*Acromioclavicular Joint Injection & Aspiration Cases* *Biceps Tendon Sheath Injection Cases* *Paracentesis & Thoracentesis Cases* *US-Guided Internal Jugular Cannulation, Subclavian Cannulation, & Femoral Line Placement Cases* *Peripheral Venous Access Cases* *Glenohumoral Joint Injection & Aspiration Cases* *Subacromial-Subdeltoid Bursa Injection & Aspiration Cases* *Tibiotalar Joint Injection & Aspiration Cases*

Curriculum Requirements Not Covered:

Recognize and identify the sonographic appearance of normal anatomic structures, including anatomic variants and normal Doppler patterns: Anterior abdominal wall

Recognize, identify, and appropriately document the abnormal sonographic and Doppler patterns of disease processes, pathology, and pathophysiology: Breast, Scrotum, Anterior abdominal wall, Brain & spinal cord

Sonographic and Doppler patterns in clinical diseases that may occur in the following categories: Immunologic (non-OB/GYN)

Abnormal gynecologic sonographic patterns: Degenerative, Inflammatory, Traumatic, Infectious, Obstructive, Metabolic, Immunologic, Infertility procedures

Abnormal sonographic characteristics in pregnancy: Maternal factors, Postpartum, Fetal therapy

SonoSim also covers several sections of the **Learning Competencies Common to Each Concentration,** including ultrasound physics, medical terminology, normal anatomy and pathologic conditions, and basic patient care, such as patient positioning and infection control.

Learning Competencies Common to Each Concentration		
Curriculum Requirements	**SonoSim Courses & Lessons**	**Relevant SonoSimulator Cases**
Utilize oral and written communication:		
Recognize significant clinical information and historical facts from the patient and the medical records, which may impact the diagnostic examination	*All SonoSim Core & Advanced Clinical Courses*	*All SonoSim Core & Advanced Clinical Cases*
Comprehend and employ appropriate medical terminology, abbreviations, symbols, terms, and phrases	*All SonoSim Courses*	*All SonoSim Cases*
Educate other health care providers and the public in the appropriate applications of ultrasound and other diagnostic vascular evaluation, including the following:		
Medical terminology, sonographic/other vascular terminology, pertinent clinical signs, symptoms, laboratory tests, & pertinent legal principles	*All SonoSim Courses*	*All SonoSim Cases*
Provide basic patient care and comfort:		
Maintain infection control and utilize standard precautions	*All SonoSim Core Clinical, Advanced Clinical, & Procedures Courses*	--
Proper patient positioning	*All SonoSim Courses*	*All SonoSim Cases*

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Anticipate and be able to respond to the needs of the patient:		
Demonstrate age related competency (i.e., neonates, pediatric patients, adolescents, adults, and obstetric patients)	*All Advanced GYN Courses* *All Advanced OB Courses*	--
Respond appropriately to parental needs	*Pediatric Series [In Development]*	
Recognize when sedation may be appropriate		
Demonstrate appropriate care in nursery and intensive care environments (ancillary equipment, thermal, central venous lines, ET tubes, respiratory needs)	*eFAST, FAST, & RUSH Courses* *Pediatric Series [In Development]*	
Demonstrate knowledge and understanding of human gross anatomy and sectional anatomy:		
Evaluate anatomic structures in the region of interest	*All SonoSim Courses*	*All SonoSim Cases*
Recognize the sonographic appearance of normal tissue structures, including the following: sectional anatomy, embryology, normal sonographic patterns	*All SonoSim Anatomy & Physiology Courses*	*All SonoSim Anatomy & Physiology Cases* *All SonoSim DMS Protocol Cases*
Demonstrate knowledge and understanding of physiology, pathology, and pathophysiology:		
Obtain and evaluate pertinent patient history and physical findings	*All SonoSim Core & Advanced Clinical Courses*	*All SonoSim Core & Advanced Clinical Cases*
Extend standard diagnostic testing protocol as required by patient history or initial findings		
Recognize examination findings that require immediate clinical response and notify the interpreting physician of such findings, including the following:		
Patient interview & examination techniques, physiology including blood flow dynamics, and pertinent pathology & pathophysiology	*All SonoSim Core & Advanced Clinical Courses*	*All SonoSim Core & Advanced Clinical Cases*
Demonstrate knowledge and understanding of acoustic physics, Doppler ultrasound principles, and ultrasound instrumentation:		
Select the appropriate technique(s) for examination(s) being performed	*All SonoSim Courses*	*All SonoSim Cases*
Adjust instrument controls to optimize image quality	*Fundamentals of Ultrasound:* Ultrasound System Operation	
Perform linear, area, circumference, and other related measurements from sonographic images or data	*All Advanced OB Courses*	
Recognize and compensate for acoustical artifacts	*Fundamentals of Ultrasound:* Imaging Artifacts	
Minimize patient exposure to acoustic energy	*Fundamentals of Ultrasound:* Infection Control & Biosafety	--
Apply basic concepts of acoustic physics which include the following:		
Sound production and propagation & interaction of sound and matter	*Fundamentals of Ultrasound:* Basic Ultrasound Physics	*All SonoSim Cases*
Instrument options, transducer selection, principles of ultrasound instruments, & modes of operation	*Fundamentals of Ultrasound:* Transducer Basics, Imaging Conventions, Imaging Modes	
Operator control options	*Fundamentals of Ultrasound:* Ultrasound System Operation	

Curriculum Requirements	SonoSim Courses & Lessons	Relevant SonoSimulator Cases
Physics of Doppler, principles of Doppler techniques, & methods of Doppler flow analysis	*Fundamentals of Ultrasound:* Doppler Mode Imaging	*Aorta/IVC, Lungs, and Upper Airway Anatomy & Physiology Cases* *Aorta/IVC, DVT, & RUSH Core Clinical Cases* *All Advanced GYN, Advanced Cardiac, & Procedures Cases* *SonoSim LiveScan® Critical Care & Genitourinary Cases* *All DMS Vascular Protocol Cases*
Acoustic artifacts	*Fundamentals of Ultrasound:* Imaging Artifacts	*All SonoSim Cases*
Demonstrate knowledge and understanding of the interaction between ultrasound and tissue and the probability of biological effects in clinical examinations, including the following:		
Biologic effects	*Fundamentals of Ultrasound:* Infection Control & Biosafety	--
Generally accepted maximum safe exposure levels	*Fundamentals of Ultrasound:* Infection Control & Biosafety *First-Trimester Pregnancy:* General Considerations	
ALARA principle		
Recognize the importance of, and employ, ergonomically correct scanning techniques:		
Equipment adjustments	*All Procedures Courses*	--
Patient positioning	*All SonoSim Courses*	

Curriculum Requirements Not Covered:

Maintain clinical records; Interact with the interpreting physician or other designated physicians with oral or written summary of findings as permitted by employer policy and procedure; Identify life-threatening situations and implement emergency care as permitted by employer procedure, including the following: pertinent patient care procedures, principles of psychological support, emergency conditions and procedures, & first aid and resuscitation techniques; Review data from current and previous examinations to produce a written/oral summary of technical findings, including relevant interval changes, for the interpreting physician's reference; Recognize examination findings that require immediate clinical response and notify the interpreting physician of such findings, including the following: chart & referral evaluation, diagnostic testing protocols related to specific disease conditions, & pertinent legal issues; Utilize appropriate devices to obtain pertinent documentation; Emerging technologies; Recording techniques; Pertinent in-vitro and in-vivo studies; Exposure display indices; Employ professional judgment and discretion: protect the patient's right to privacy based on current federal standards and regulations, maintain confidentiality, and adhere to the professional codes of conduct/ethics through the following: medical ethics, pertinent legal principles, professional interaction skills, and professional scopes of practice; understand the fundamental elements for implementing a quality assurance and improvement program, and the policies, protocols, and procedures for the general function of the ultrasound laboratory, including the following: administrative procedures, quality control procedures, elements of quality assurance program, records maintenance, personnel and fiscal management, and trends in health care systems; recognize the importance of continuing education, through the following: professional journals, conferences, lectures, in-house educational offerings, professional organizations and resources, recent developments in sonography, and research statistics and design; Personal fitness, supports, tools, and devices