

Technical Standards for Cardiovascular Sonography

Our program technical standards have been developed to help students understand nonacademic standards, skills, and performance requirements expected of a student in this particular curriculum.

If an accommodation is necessary to participate in the program, it is imperative to identify a reasonable accommodations to those students who qualify under the Americans with Disabilities Act (ADA). Reasonableness is determined by the Disability Services Office (DSO) and the program on a case-by-case basis utilizing the program technical standards. The accommodation needs to be in place prior to the start of the program, or it may delay your ability to start the program. It is the student's responsibility to contact the DSO and request accommodations.

Skills	Description	Specific Examples
Motor Skills	Abilities required of a candidate include gross and fine muscular movements, equilibrium, strength, for the handling of patient, self, and equipment. A candidate must have these abilities to provide safe care for patients in various states of mobility and awareness.	<ul style="list-style-type: none"> • Elicit information from patients by palpation, auscultation, percussion, testing muscle strength and function, penetration of the skin, and other diagnostic maneuvers. • Safely perform procedures. • Provide other patient services and patient associated services. • Safely lift, manipulate, and use equipment correctly. • Lift fifty (50) pounds of weight up and over the level of the head. • Reach up to six (6) feet off the floor, and ability to reach frequently. • Transfer immobile patients from stretcher to sonography table with assistance.

Skills	Description	Specific Examples
		<ul style="list-style-type: none"> • Transfer patients from wheelchair to stretcher or examination beds and back. • Push a standard wheelchair from a waiting area or patient's room to the ultrasound department. • Use a keyboard, mouse and/or trackball for inputting clinical data into consoles, computers, and electronic charts. • Sitting less than 2 hours a day. • Standing up to 80% of an 8-hour day. • Walking 4-6 hours a day. • Bending frequently • Grasping/Gripping for constantly extended periods. (for an hour or more) • Pushing and pulling for extended periods. • Moderate amounts of stooping. • Moderate amounts of crouching. • Occasional kneeling • Ability to work long and/or irregular hours • Ability to move a maximum of a 290-pound patient in a 2-person or a 3-person transfer. • Reach forward up to 18 inches while holding an object weighing 15 pounds. • Push ultrasound equipment on wheels weighing up to 300 pounds or more.
Sensory (Vision, Smell, and Hearing)	Visual, auditory, olfactory, and tactile senses must be sufficient enough to provide patient care, monitor and assess health needs,	<ul style="list-style-type: none"> • Skillfully use precision instruments such as microscopes, oscilloscopes, gauges, control panels, and other electronic digital equipment. • Observe and evaluate (i.e. patient's body habitus, transducer selection).

Skills	Description	Specific Examples
	and to maintain a safe environment.	<ul style="list-style-type: none"> • Observe the results of technical factors (i.e. image critique). • Observe the results of certain stimuli (i.e. medication reaction). • Observe changes in equipment operation (i.e. see loss of quality of equipment). • Visually monitor patients and review and interpret images in low light levels. • Visual acuity to visualize and resolve between structures that are closely spaced. • Ability to visualize colors and determine colors as displayed on equipment as well as in relation to the patient's condition. • Ability to adequately differentiate between subtle shades of black, white, gray and color. • Ability to hear spoken voices from patients at a conversational tone and level. • Ability to hear warning beeps on patient's equipment (i.e. IV alarms, heart monitor and oxygen saturation monitors). • Ability to hear Doppler shifts on Spectral Doppler exams. • Ability to assess patient and other situations rapidly, determine course of action, delegate activities to co-workers, and/or respond as appropriate. • Recognize and respond to an emergency or urgent situation.

Skills	Description	Specific Examples
Technological	The ability and skills to utilize current electronic, digital, and medical technologies.	<ul style="list-style-type: none"> • Retrieve and enter patient data into electronic medical records. • Store and retrieve digital sonographic images from scanners and network devices (PACS). • Transfer exams from scanners to network devices. • Transfer exams to external storage media. • Print exams on various types of printers (laser, thermal, inkjet). • Utilizing keyboards and touch screens to enter data and optimize images. • Utilizing knobs, toggle switches, and buttons to optimally perform an ultrasound scan.
Communication	Communication abilities sufficient for effective and sensitive interaction with faculty, students, physicians, patients, etc. in verbal and written form.	<ul style="list-style-type: none"> • Elicit information and cooperation (i.e. questioning of patient, giving breathing instructions). • Describe changes in mood, activity, and posture. • Perceive nonverbal communication (i.e. pain, lack of understanding). • Communicate in a clear and concise manner to people in various departments in both written and spoken English. • Understand spoken and written English in the clinical and classroom settings. • Speech discrimination within functional limits for telephone and personal communication. • Read and apply appropriate instructions in treatment charts, notes, and records. • Ability to work in a noisy environment with many interruptions.

Skills	Description	Specific Examples
		<ul style="list-style-type: none"> • Ability to accurately read and transcribe moderately illegible handwriting. • Ability to hear, understand, and respond appropriately to comments, questions, and instructions given in person, over the phone, and in writing/print.
Critical Thinking/ Problem Solving	<p>Abilities required of a candidate include measurement, calculation, reasoning, analysis, and synthesis. Conceptual, integrative, and quantitative abilities are also required.</p> <p>A candidate must have these abilities to accurately perform sonographic technique to produce quality sonograms.</p>	<ul style="list-style-type: none"> • Solve problems (i.e. mathematical computation). • Comprehend three dimensional and spatial relationships (i.e. anatomical relations). • Understand the spatial relationship of structures. • Comprehend and apply clinical instructions given from department personnel. • Ability to remember and recall a large amount of information. • Ability to apply critical thinking skills in regard to obtaining adequate clinical history from the patient and correlating that information with exam findings. • Exercise good judgment.
Interpersonal Skills	<p>The ability to interact successfully with individuals of all age groups and genders, families, groups, etc. from a variety of social, emotional, cultural and intellectual backgrounds. A candidate must have these abilities to provide empathetic support to patients where quality care is dependent on a team approach.</p>	<ul style="list-style-type: none"> • Ability to develop mature, sensitive and effective relationships with patients, clients, and fellow workers (interpersonal skills). • Tolerate physically taxing workloads. • Function effectively under stress. • Adapt to changing environments (i.e. flexible schedules). • Display flexibility and ability to function during uncertainty inherent in health care (i.e. emergency conditions).

Skills	Description	Specific Examples
		<ul style="list-style-type: none"> • Display: <ul style="list-style-type: none"> ○ Compassion ○ Empathy ○ Integrity ○ Concern for others ○ Interest and motivation • Ability to calmly and politely cope in stressful situations, in emergency patient situations, or situations with other staff members.
Environmental Tolerance	The ability to work in a variety of environments and situations.	<ul style="list-style-type: none"> • Demonstrate the emotional stability to function effectively under stress and to adapt to an environment that may change rapidly, without warning, and/or in unpredictable ways. • Perform sonography scans in various locations such as the Emergency Department, Operating Room, patient rooms, ICU, and pediatrics. • Work safely with toxic substances used to disinfect transducers and equipment. • Practice universal precautions when working with patients with communicable diseases.

This document is intended to serve as a guide regarding the physical, emotional, intellectual and psychosocial expectations placed on a student. All of the previously listed abilities, skills, and knowledge in a candidate will be continually tested and evaluated during the educational process of this curriculum. This document cannot include every conceivable action, task, ability or behavior that may be expected of a student. Meeting these technical standards does not guarantee employment in this field upon graduation. Ability to meet the program's technical standards does not guarantee a student's eligibility for any licensure, certification exam, or successful completion of the degree program.