ECHO2110 - Ultrasound Physics Review

Credits:	2 (2/0/0)
Description:	This course is the cumulative preparation for the national credentialing board examinations in ultrasound physics and instrumentation. It involves real-world applications of physics, artifact recognition and rectification, and instrumentation of ultrasound equipment. Students will participate in interactive mock examinations in preparation for the credentialing examinations. Activities include a review of complex echocardiography cases that require critical thinking skills.
Prerequisites:	• ECHO1100 • ECHO1105 • ECHO1110 • ECHO1115 • ECHO1125
Corequisites:	• ECHO2100
Pre/Corequisites*:	
Competencies:	1. Demonstrate an understanding of ultrasound physical principles and answer questions about the physical parameters involved in ultrasound and how they may be affected. 2. Use the appropriate formula to calculate the different ultrasound parameters and determine the relationships between variables found in mathematical equations that pertain to ultrasound listed in the topics for this course. 3. Answer Question-and-Answer (Q & A) questions related to describing functional components of a pulse-echo ultrasound imaging system. 4. Apply concepts of ultrasound physics to energy transmission and image resolution. 5. Answer Q & A questions related to the physical causes of ultrasound imaging artifacts and bioeffects. 6. Answer Q & A questions related to differentiating the parameters in continuous wave vs. pulsed wave. 7. Answer Q & A questions related to differentiating the characteristics of various ultrasound transducers by design, function and applications. 8. Answer Q & A questions related to the regions of a sound beam and the parameters affecting them. 9. Answer Q & A questions related to the different hardware parts of an ultrasound system. 10. Answer Q & A questions related to all types of Doppler. 11. Answer Q & A questions regarding the ALARA (As Low As Reasonably Achievable) principle.
MnTC goal areas:	None

**Can be taking as a Prerequisite or Corequisite.*

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