

ECHOCARDIOGRAPHY TECH AAS - COURSE DESCRIPTIONS

SON 1113 ULTRASOUND PHYSICS AND INSTRUMENTATION I

A course in the physics and instrumentation of ultrasound which will cover ultrasonic wave generation and propagation, interaction of sound and matter, transducer and instrumentation designs, ultrasound scanning modes, image artifacts and quality, Doppler effect and Doppler instrumentation components.

SON 1133 ECHOCARDIOGRAPHY I

Emphasis on basic cardiac anatomy imaging techniques and principles. Topics include basic imaging protocols, scan planes in relation to cardiac anatomy and principles of acquisition of diagnostic images.

SON 1153 PATIENT CARE, MEDICAL ETHICS & LAW

Students will learn sonographer safety; current Sonographic protocols; and basic patient care. Vital sign assessment will be introduced to the student, as well as medical terminology. This course covers study techniques such as effective note taking, effective listening, and test-taking strategies. For the practitioner and student entering the clinical environment, it offers step-by-step descriptions of basic medical procedures and patient care, showing how to safely and ergonomically perform procedures and how to interact with patients in a clinical setting. This includes patient communication and psychological support strategies, as well as patient transfer techniques. Topics such as infection control will be emphasized, as well as current utilization of standard precautions to prevent the spread of infection. Emergency conditions and procedures, to include first aid and resuscitation techniques will be presented to the student. A study of medical ethics & the laws that affect and pertain to Sonographers and other imaging professionals is introduced and explained. This class will also help students make knowledgeable decisions about patient care issues in respect to ethics and law. This class examines the many issues that affect sonographers and other imaging professional and applies the examples to real-world situations. The student will be introduced to topics such as patient autonomy, medical documentation, informed consent, confidentiality & HIPPA, managed care, diversity and death and dying. The student will learn to apply their own values, common sense, and applicable healthcare law and medical ethics to solve challenging dilemmas. Professional interaction skills and the sonographer's professional scope of practice will be emphasized. Prerequisites: BIOL 1303, ENGL 1113, ENGL 1213, HIST 1483, PHYS 1114, POLS 1113, MATH 1513, CHEM 1214

SON 1213 PHYSICS & INSTRUMENTATION II

Continuation of son 1113 physics & instrumentation i. A course in the physics and instrumentation of ultrasound which will cover ultrasonic wave generation and propagation, interaction of sound and matter, transducer and instrumentation designs, ultrasound scanning modes, image artifacts and quality, doppler effect and doppler instrumentation components. Prerequisites: Son 1113

SON 1253 CLINICAL EXPERIENCE I

Clinical rotation in various clinical settings (hospital and/or clinic) for observation and some hands-on practice in a patient care setting under direct supervision of registered sonographers

SON 2014 ECHOCARDIOGRAPHY II

An emphasis on adult acquired cardiac pathologies. Topics include cardiovascular pathophysiology; quantitative measurements and the application of 2-D, M-Mode and Doppler. Recognition of the sonographic appearances of cardiovascular disease is stressed. Prerequisite: SON 1133.

SON 2023 ECHOCARDIOGRAPHY III

Instruction in advanced echocardiographic procedures. Topics include stress echo, related diagnostic imaging and related noninvasive cardiac testing.

SON 2134 ECHOCARDIOGRAPHY IV

A continuation of Echocardiography III with emphasis on cardiac disease. A discussion of quantitative measurements and application of 2-D, M-Mode, Doppler and recognition of the sonographic appearances of cardiac disease is stressed. Prerequisite: SON 2023.

SON 2253 CLINICAL EXPERIENCE II

Clinical rotation in various clinical settings (hospital and/or clinic) for observation and hands-on practice in a patient care setting under direct supervision of registered sonographers. Prerequisite: SON 1253.

SON 2313 CARDIOVASCULAR CONCEPTS

This course is a continuation from SON 1153 and will continue to expand the knowledge of the cardiovascular sonographer. The course is designed to prepare the student for the Cardiovascular Principles section of their Registry. The anatomy and physiology of the cardiac and vascular systems are presented, with special emphasis on the relationship and connection of the two systems. Topics such as cardiovascular anatomy, cardiovascular physiology and hemodynamics, pathology, pathophysiology, pharmacology of the cardiovascular system, the electrical conduction system, congenital heart defects, intracardiac pressures and their correlation with other cardiovascular phenomenon, coronary artery distribution, determinants and assessment of left ventricular performance and the phases of the cardiac cycle are discussed. Examination methods and interventional procedures are also explained. The textbook contains hundreds of sample questions that will help the student to prepare for clinical life as well as their national Registry. Prerequisites: SON 1153

SON 2353 CLINICAL EXPERIENCE III

Clinical rotation in various clinical settings (hospital and/or clinic) for observation and some hands-on practice in a patient care setting under direct supervision of registered sonographers. Prerequisite: SON 2253.

SON 2453 CLINICAL EXPERIENCE IV

Clinical rotation in various clinical settings (hospital and/or clinic) for observation and some hands-on practice in a patient care setting under direct supervision of registered sonographers. Prerequisite: SON 2353.

BIOL 1214 HUMAN ANATOMY

Morphology of the human body and its systems. Laboratory includes dissection and study of the human cadaver. Prerequisite: [R] [SCI] Math 0104.

PSIO 2314 HUMAN PHYSIOLOGY

Structure and function of the systems of the human body. Lab: three hours per week. Pre-requisite: CHEM 1214 or CHEM 1314.