

CARDIOVASCULAR TECHNOLOGY (CVT)

CVT A100 2 Units (36 lecture hours)

Introduction to Electrocardiography

Prerequisite(s): BIOL A221; or BIOL A220 and BIOL A225.

Grading Mode: Standard Letter

Transfer Credit: CSU

Electrocardiographic interpretation and testing procedures for the ECG technician. Includes anatomy and electrophysiology of the cardiac conduction system; basic cardiac arrhythmias including sinus, atrial, junctional, and ventricular arrhythmias and heartblocks.

CVT A130 3 Units (54 lecture hours)

Introduction to Invasive Cardiology

Grading Mode: Standard Letter

Transfer Credit: CSU

Introduction to the concepts of cardiac catheterization primarily for diagnosis of coronary artery disease. Includes hemodynamics, cardiovascular radiologic safety, aseptic and sterile field maintenance, pressure monitoring equipment, catheters, and contrast used for catheterization. Catheterization techniques, drug pharmacology used in the procedures and complications of cardiac catheterization. PREREQUISITE: CVT A160.

CVT A150 2 Units (36 lecture hours)

Advanced Electrocardiography

Prerequisite(s): CVT A100.

Grading Mode: Standard Letter

Transfer Credit: CSU

Advanced procedures in electrocardiographic testing, including stress testing, Holter monitoring, and pacemakers. Advanced arrhythmias including ventricular conduction disturbances effects of drugs, electrolyte imbalances, myocardial infarction, and cardiac pharmacology.

CVT A160 3 Units (54 lecture hours)

Cardiac Anatomy/Pathophysiology

Prerequisite(s): ALH A111 or concurrent enrollment; and BIOL A221.

Grading Mode: Standard Letter

Transfer Credit: CSU.

Cardiac anatomy, physiology, and pathology. Includes cardiovascular structures, hemodynamics, cardiac output and blood pressure, coronary artery disease and myocardial infarction, valvular diseases, infectious diseases, cardiac tumors and myopathies, and congenital heart disease.

CVT A170 5 Units (18 lecture hours; 288 other hours)

ECG Clinical Experience

Prerequisite(s): ALH A115 and CVT A160.

Grading Mode: Pass/No Pass

Transfer Credit: CSU.

Assigned clinical practice within a health care facility in areas of routine ECG testing, stress testing, monitor technician, Holter monitoring, and pacemaker evaluation. Offered on a pass-no pass basis only.

CVT A190 3 Units (54 lecture hours)

Introduction to Sonography and Imaging Physics

Prerequisite(s): CVT A160.

Grading Mode: Standard Letter

Transfer Credit: CSU.

Introduction to ultrasound physics & instrumentation for cardiac and vascular anatomy, visualized on 2-dimensional and 3-dimensional ultrasound imaging.

CVT A200 3 Units (54 lecture hours)

Introduction to Echocardiography

Co-requisite(s): CVT A205.

Grading Mode: Standard Letter

Transfer Credit: CSU

Theory, equipment, and procedures for echocardiography to include M-mode, 2D, and Doppler. Recognition of specific echocardiographic patterns and abnormalities. Relates anatomical cardiac images to echocardiographic images. PREREQUISITE: CVT A160.

CVT A205 1 Unit (54 lab hours)

Introduction to Echocardiography Lab

Co-requisite(s): CVT A200.

Grading Mode: Standard Letter

Transfer Credit: CSU

Skill development in using echocardiographic imaging equipment, machine adjustments, and obtaining correct views on M-mode, 2-dimensional, Doppler and color flow echocardiograms under direct supervision. Includes exercises in recognition of cardiac anatomy and pathology found in diagnostic ultrasound imaging evaluation for cardiac function.

CVT A210 5 Units (18 lecture hours; 432 other hours)

Echocardiography Clinical Lab 1

Prerequisite(s): CVT A160.

Co-requisite(s): CVT A200 and CVT A205.

Grading Mode: Pass/No Pass

Transfer Credit: CSU.

Experience in echocardiography in a clinical facility to include conferences or lectures by physicians, sonographers, and guest lecturers to relate patient clinical presentations to diagnostic findings. Offered on a pass-no pass basis only.

CVT A220 **3.5 Units (54 lecture hours; 36 lab hours)**
Ultrasound Sonographic Physics and Instrumentation
Prerequisite(s): CVT A150.

Grading Mode: Standard Letter
Transfer Credit: CSU.

The study of physical principles and instrumentation of diagnostic medical sonography, echocardiography, vascular ultrasound and peripheral vascular ultrasound. It includes sonographic equipment design, instrumentation and sonographic imaging application.

CVT A220L **0 Units (36 lab hours)**
Ultrasound Sonographic Physics and Instrumentation Lab

Grading Mode: Not Graded
 Ultrasound Sonographic Physics and Instrumentation Lab. Must also be enrolled in CVT A220,

CVT A240 **5 Units (400 other hours)**
Invasive Cardiology Clinical Lab 1
Co-requisite(s): CVT A130.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Clinical practice within a cardiac catheterization laboratory to include performances of patient monitoring, data collection, and recognition of anatomical and hemodynamic abnormalities for coronary artery disease. Course includes one hour of discussion-seminar with physician lecturers each week. Offered on a pass-no pass basis only.

CVT A250 **3 Units (54 lecture hours)**
Advanced Echocardiography
Co-requisite(s): CVT A255.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Advanced theory, equipment, and procedures in echocardiography, including Doppler, color flow Doppler in adults, pediatric and fetal echocardiography. Further development of techniques and evaluation of disease states using exercise stress, TEE, pharmacological stress, and contrast echocardiographic studies. PREREQUISITE: CVT A200 and CVT A205.

CVT A255 **1 Unit (54 lab hours)**
Advanced Echocardiography Lab
Prerequisite(s): CVT A200 and CVT A205.

Co-requisite(s): CVT A250.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Skill development in advanced echocardiographic techniques under direct supervision. Includes spectral Doppler, color flow Doppler, pediatric, stress/pharmacological stress, TEE, and further evaluation of adult echocardiography. Computer lab modules for advanced echocardiographic techniques and Registry Exam Review.

CVT A260 **2.5 Units (36 lecture hours; 27 lab hours)**
Cerebrovascular and Peripheral Ultrasound
Prerequisite(s): CVT A200.

Co-requisite(s): CVT A250 and CVT A255.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Diagnosis and scanning techniques in the evaluation of cerebrovascular disease by ultrasound and Doppler testing. Includes normal anatomy and physiology of the cerebrovasculature, ultrasound instrumentation, and examination techniques relating to pathologies. Upper and lower vascular extremity anatomy and imaging evaluation for diagnostic quality. Imaging demonstrations and direct student scanning.

CVT A265 **6 Units (18 lecture hours; 486 other hours)**
Echocardiography Clinical Lab 2
Prerequisite(s): CVT A210.

Co-requisite(s): CVT A250 and CVT A255.

Grading Mode: Pass/No Pass
Transfer Credit: CSU.

Experience in echocardiography and cerebral vascular ultrasound in an assigned clinical facility to include conferences, physician lectures, and seminars relating to actual patient situations or examinations for diagnostic findings. Successful clinical performance evaluation and submission of written patient case study. Offered on a pass-no pass basis only.