

Cardiovascular Technology Non- Invasive (NCT)

NCT 110. Echo Fundamentals. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0

This course provides information related to the profession and practice of echocardiography. Emphasis is placed on medical-legal and ethical aspects of healthcare, patient centered care, understanding basic echocardiography imaging views and cardiovascular imaging modalities. Upon completion, students should be able to demonstrate an understanding of basic echocardiography imaging views, cardiovascular imaging modalities, medical-ethical issues and patient care practices. Corequisites: Take all: ICT 113 and NCT 134

NCT 133. Cardiovascular Ultrasound Principles. 3.0 Credits.

Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course introduces the principles of ultrasound applications and instrumentation of cardiovascular imaging procedures. Emphasis is placed on the physical principles of cardiovascular imaging as a diagnostic tool, instrumentation and applicable effects, and biosafety issues. Upon completion, students should be able to discuss applications of ultrasound imaging, understand instrumentation applications and improve quality imaging while maintaining bioeffects standards.

Prerequisites: Take all: ICT 113, NCT 110, and NCT 134

Corequisites: Take NCT 143

NCT 134. Cardiovascular Anatomy and Physiology. 4.0 Credits.

Class-4.0. Clinical-0.0. Lab-0.0. Work-0.0

This course provides information related to cardiovascular anatomy and physiology. Emphasis is placed on the hemodynamics of pathophysiological disease states, embryology and the diagnosis and treatment of cardiovascular diseases. Upon completion, students should be able describe normal and abnormal cardiovascular diseases, associated hemodynamic findings, and treatment options.

Corequisites: Take One Set: Set 1: ICT 113 and ICT 110; Set 2: ICT 113 and NCT 110

NCT 143. Echocardiography I. 6.0 Credits. Class-3.0. Clinical-6.0.

Lab-3.0. Work-0.0

This course introduces echocardiography procedures, cardiovascular imaging modalities and their applications in the diagnosis of cardiovascular diseases. Emphasis is placed on the diagnostic capabilities of echocardiography related to clinical presentations of cardiovascular diseases and development of basic imaging skills. Upon completion, students should be able to perform basic echocardiography/Doppler examinations and describe the diagnostic information obtained by noninvasive procedures.

Prerequisites: Take all: ICT 113, NCT 110, and NCT 134

Corequisites: Take NCT 133

NCT 251. Echocardiography II. 8.0 Credits. Class-2.0. Clinical-15.0.

Lab-2.0. Work-0.0

This course introduces advanced echocardiography/Doppler techniques, modalities, and hemodynamic assessments utilized for the diagnosis of acquired and congenital cardiovascular diseases. Emphasis is placed on protocols, interpretation of echocardiography/Doppler data with correlation to the clinical presentation of disease states in the clinical setting. Upon completion, students should be able to identify abnormal heart diseases through analysis and correlation of imaging data and demonstrate increasing clinical skill development.

Prerequisites: Take NCT 133 NCT 143, minimum grade of C,

Corequisites: Take NCT 253

NCT 253. Hemodynamic Echocardiographic Principles. 3.0 Credits.

Class-2.0. Clinical-0.0. Lab-2.0. Work-0.0

This course provides an introduction to the hemodynamic approach in performing an echocardiogram to detect cardiovascular heart disease. Emphasis is placed on the applications of hemodynamic calculations in valvular heart disease and development of quality standard practices for quality patient care outcomes. Upon completion, students should be able to perform hemodynamic calculations on an echocardiogram.

Prerequisites: Take NCT 133 NCT 143, minimum grade of C

Corequisites: Take NCT 251

NCT 273. Echocardiography III. 14.0 Credits. Class-3.0. Clinical-30.0.

Lab-2.0. Work-0.0

This course provides expanded techniques and applications required for a comprehensive echocardiography procedure. Emphasis is placed on interpretation of advanced qualitative and quantitative calculations of various heart diseases with increasing skill development in the clinical setting. Upon completion, students should be able to independently perform a comprehensive diagnostic echocardiography examination with relative quantitative calculations with entry level skill competency.

Prerequisites: Take all: NCT 251 and NCT 253