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# COURSE DESCRIPTIONS

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## CARDIOVASCULAR TECHNOLOGY

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### **CVT 2112: Hospital Policies and Patient Care**

Prerequisite: Acceptance into the Cardiac Sonography program.

Hospital Policies and Patient Care is an in-depth study of hospital departmental policies, procedures, protocols and work activities emphasizing ethics, attendance, dress codes/grooming standards and patient confidentiality.

2 Hours Lecture

Ozark Allied Health Fee: \$62.

### **CVT 2123: Sonography Physics and Instrumentation I**

Prerequisite: Acceptance into the Cardiac Sonography program

Sonography Physics and Instrumentation I includes physics of ultrasonic wave generation and propagation, transducer design, color flow imaging methodology, Doppler effect and Doppler instrumentation components, signal processing, basic equipment types, interactive properties of ultrasound with human tissues, possible biologic effects, information storage, contrast agents, quality control and image artifacts.

3 Hours Lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2132: Echocardiography I Laboratory**

Prerequisite: Acceptance into the Cardiac Sonography program.

Co-requisite: CVT 2133 Echocardiography I Echocardiography I.

Lab skills practice to apply concepts presented in Echocardiography I.

4 hours laboratory.

Ozark CF Cardiac Sonography Fee: \$135; Ozark Allied Health Fee: \$62.

### **CVT 2133: Echocardiography I**

Prerequisite: Acceptance into the Cardiac Sonography program.

Co-requisite: CVT 2132 Echocardiography I Laboratory Echocardiography I Lab.

Echocardiography I is an introduction to echocardiography terminology and symbols, cardiac anatomy, cardiac embryology, intracardiac pressure gradients, hemodynamics, heart murmurs and scan planes. Sonographic protocol for normal echocardiogram studies will be introduced.

3 hours lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2144: Clinical Practicum I**

Prerequisite: Admission to the Cardiac Sonography program.

Clinical Practicum I students are assigned to local hospitals and medical centers with direct supervision of a registered echocardiographer. This course demarcates the professional role of the echocardiographer, the patient-technologist relationship, and the interaction between the physical and allied health services. It also provides hands-on practice in a patient care setting.

12 hours clinical.

Ozark Malpractice Fee: \$16; Ozark CF Cardiovascular Technology Fee: \$100; Ozark Allied Health Fee: \$124.

### **CVT 2211: Principles of Electrocardiography**

Prerequisites: Admission to the Cardiac Sonography program.

Principles of electrophysiology features the electrophysiology of the heart, basic waves, complexes and 12 lead EKG. The course emphasizes interpretation of normal sinus rhythm and advanced arrhythmias. The heart's electrical conduction system is explained. The course also introduces concepts essential to the performance and interpretation of exercise physiology, stress testing and Holter monitoring.

1 hour lecture.

Ozark Allied Health Fee: \$31.

### **CVT 2213: Cardiac Pathology Studies**

Prerequisite: Acceptance into the Cardiac Sonography program.

An emphasis on adult cardiac pathologies with diagnosis, techniques, differential diagnoses, caveats, and epidemiology. Recognition of the sonographic appearance of cardiovascular disease is emphasized. This is achieved by focusing primarily on specific case studies. Basic pharmacology will be introduced. Laboratory values, signs, and symptoms of cardiac disease will be discussed.

3 Hours Lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2223: Sonography Physics and Instrumentation II**

Prerequisite: CVT 2123 Sonography Physics and Instrumentation I Sonography Physics and Instrumentation I and Acceptance into the Cardiac Sonography program.

Continuation of Sonography Physics and Instrumentation I including physics of ultrasonic wave generation and propagation, transducer design, color flow imaging methodology, Doppler effect and Doppler instrumentation components, signal processing, basic equipment types, interactive properties of ultrasound with human tissues, possible biologic effects, information storage, contrast agents, quality control and image artifacts.

3 Hours Lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2231: Echocardiography II Laboratory**

Prerequisite: CVT 2132 Echocardiography I Laboratory Echocardiography I Lab and acceptance into the Cardiac Sonography program.

Co-requisite: CVT 2233 Echocardiography II Echocardiography II.

Lab skills practice to apply concepts presented in CVT 2233 Echocardiography II Echocardiography II.

2 Hours Laboratory.

Ozark Allied Health Fee: \$31.

### **CVT 2233: Echocardiography II**

Prerequisite: CVT 2133 Echocardiography I Echocardiography I.

Co-requisites: CVT 2231 Echocardiography II Laboratory Echocardiography II Lab and acceptance into the Cardiac Sonography program.

Echocardiography II includes advanced echocardiographic procedures. Sonographic protocol for abnormal studies will be presented. Areas of studies will include abnormal echocardiograms, transesophageal echocardiograms, exercise stress echocardiograms, pharmacologic stress echocardiograms, 3D transthoracic echocardiograms, 3d transesophageal echocardiograms and ultrasound enhanced agent echocardiograms. Common congenital abnormalities, postoperative anatomy, cardiac diseases, interventional procedures, emergency procedures, abnormal perfusion and function, and evaluation of pathophysiology of cardiovascular diseases are all discussed.

3 Hours Lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2244: Clinical Practicum II**

Prerequisite: CVT 2144 Clinical Practicum I Clinical Practicum I and acceptance into the Cardiac Sonography program.

Clinical Practicum II students are assigned to supervised clinical experience in local hospitals and medical centers by sub-specialty areas with emphasis on set-up, calibration and operation of medical instrumentation. Patient history and physical exam techniques, performance of cardiovascular testing as well as analysis and interpretation of cardiovascular diagnostic tests and data are reviewed.

12 Hours Clinical.

Ozark Malpractice Insurance Fee: \$16; Ozark Cardiovascular Technology Fee: \$400; Ozark Allied Health Fee: \$124.

### **CVT 2312: Interdisciplinary Cardiac Imaging**

Prerequisite: Admission into the Cardiac Sonography program.

This course evaluates the major imaging modalities, other than echocardiography, used to evaluate the cardiac system. This course will include the basic study of computerized tomography, cardiac catheterization, nuclear medicine, magnetic resonance, and positron emission tomography in relation to echocardiography in the evaluation of the cardiac system. The advantages, disadvantages, technology, and accurate practice of each modality will be discussed.

2 hours lecture; Allied Health Fee: \$62.

### **CVT 2313: Echocardiography Concepts**

Prerequisite: Acceptance into the Cardiac Sonography program.

This course will prepare the student for the Cardio section of the ARDMS and CCI registry. Normal and abnormal anatomy and physiology, normal and abnormal perfusion and function, congenital anomalies, postoperative anatomy, protocols, treatments, and managing emergencies are all discussed. Multiple practice exams to better prepare the student for the registries will be given.

3 Hours Lecture.

Ozark Cardiac Sonography Fee: \$40; Ozark Allied Health Fee: \$93.

### **CVT 2323: Physics Concepts**

Prerequisite: Acceptance into the Cardiac Sonography program.

This course will prepare the student for the Sonographic Physics and Instrumentation section of the ARDMS and CCI registry. Ultrasonic wave generation and propagation, transducer design, color flow imaging methodology, Doppler effect and Doppler instrumentation components, signal processing, basic equipment types, interactive properties of ultrasound with human tissues, possible biologic effects, information storage, contrast agents, quality control and image artifacts are all reviewed. Multiple practice exams to better prepare the student for the registries will be given.

3 Hours Lecture.

Ozark Allied Health Fee: \$93.

### **CVT 2344: Clinical Practicum III**

Prerequisite: CVT 2244 Clinical Practicum II Clinical Practicum II and acceptance into the Cardiac Sonography program.

Students are assigned to local hospitals and medical centers with direct supervision of a registered echocardiographer. Performance of echocardiograms as well as analysis and interpretation of echocardiograms and data are reviewed. The student will have hands-on experience recognizing and detecting the echocardiographic characteristics of normal and abnormal heart function.

12 Hours Clinical.

Ozark Allied Health Fee: \$124.

