

## ***Diagnostic Medical Sonography (DMS)***

### **DMS 104 Diagnostic Ultrasound Foundations**

3 Hours

Prerequisites: Acceptance into Diagnostic Medical Sonography Program  
3 hours weekly (3-0)

A study of clinical medicine pertinent to sonography including obtaining the clinical history and related clinical signs and symptoms from the patient chart or interview. Diagnostic testing pertinent to the ultrasound diagnosis and specialized medical terminology are discussed and defined. Medication terminology, classification and administration will be introduced. Ultrasound equipment, equipment controls, laboratory setup, and the beginning physical principles associated with diagnostic medical sonography are discussed. Quality control, medical ethics, legal issues, and ergonomics associated with diagnostic medical sonography are discussed and defined.

### **DMS 200 Medical Physics and Instrumentation**

5 Hours

Prerequisites: DMS 104, DMS 202, DMS 204, and DMS 206  
5 hours weekly (5-0)

This course will cover ultrasound instrumentation and the physical principles of sound, ultrasound, and Doppler pertinent to sonography. Emphasis will be placed on propagation principles, transducer parameters, interactive properties of ultrasound with human tissues, and quality control procedures.

### **DMS 202 Cardiac Anatomy and Physiology**

4 Hours

Prerequisites: Acceptance into Diagnostic Medical Sonography Program  
4 hours weekly (4-0)

This course is a study of the cardiac and vascular anatomy and physiology in the normal and abnormal patient. The hemodynamics, pathology, and pathophysiology of the cardiac system are discussed and analyzed. The pathology, clinical signs and symptoms, diagnostic testing, and treatment of various cardiac diseases are discussed. This is an Internet course.

### **DMS 204 Cardiac Ultrasound Imaging/Lab I**

6 Hours

Prerequisites: Acceptance into Diagnostic Medical Sonography Program  
8 hours weekly (4-4)

This course will cover the basic terminology, anatomy, instrumentation, and physical principles necessary for the student to begin two-dimensional and M-mode ultrasound scanning of the normal heart. The laboratory component of Cardiac Ultrasound Imaging is designed for the student to practice applications of basic scanning techniques and protocols with emphasis on the normal heart.

### **DMS 206 Cardiac Ultrasound Clinic I**

3 Hours

Prerequisites: Acceptance into Diagnostic Medical Sonography Program. The student must have and maintain a current CPR certificate and have a negative two-step TB test (or negative chest x-ray).  
9 hours weekly (0-9)

This course is a supervised clinical experience, which will cover basic cardiac scanning techniques and protocols with emphasis on observation of two-dimensional and M-mode scanning of the normal heart. This course is designed for the student to observe applications of the principles and concepts taught in Cardiac Ultrasound Imaging and observe a functioning ultrasound department.

### **DMS 224 Cardiac Ultrasound Imaging/Lab II**

6 Hours

Prerequisites: DMS 104, 202, 204, 206  
8 hours weekly (4-4)

This course will cover the basic terminology, anatomy, instrumentation, and physical principles necessary for the student to begin color flow, cardiac Doppler, and two-dimensional and M-mode ultrasound scanning of the abnormal and normal heart. The laboratory component of Cardiac Ultrasound Imaging and Lab II will cover scanning techniques and protocols with emphasis on color flow, cardiac Doppler, and two-dimensional and M-mode ultrasound scanning of the abnormal heart. This course also provides the students the opportunity to practice scanning techniques and protocols. This course is taught with problem-based learning techniques.

**DMS 226 Cardiac Ultrasound Clinic II**

6 Hours

Prerequisites: DMS 104, 202, 204, 206 and a current CPR certificate and have a negative two-step TB test (or negative chest x-ray)  
18 hours weekly (0-18)

The clinical component of Cardiac Ultrasound Imaging II, this course is a supervised clinical experience which will cover cardiac scanning techniques and protocols with emphasis on color flow, cardiac Doppler, and two-dimensional and M-mode ultrasound scanning of the normal heart. This course is designed for the student to practice cardiac ultrasound techniques and observe a functioning ultrasound department.

**DMS 230 Cardiac Seminar**

2 Hours

Prerequisites: Concurrent enrollment with DMS 246  
2 hours weekly (2-0)

Advanced study of cardiac ultrasound physics and echocardiography in preparation for the certifying examinations. A review of case studies and "mock" examinations will help the student to focus on his/her individual problem areas. This is an Internet course.

**DMS 236 Cardiac Ultrasound Clinic III**

5 Hours

Prerequisites: DMS 200, 224, 226 and a current CPR certificate and have a negative two-step TB test (or negative chest x-ray)  
15 hours weekly (0-15)

This course is a continuation of the clinical component of Cardiac Ultrasound Imaging II, and is a supervised clinical experience covering cardiac-scanning techniques and protocols with emphasis on two-dimensional, M-modes, color flow, and cardiac Doppler ultrasound scanning of the normal and abnormal heart. The course is designed for the students to practice cardiac ultrasound techniques and observe a functioning ultrasound department.

**DMS 246 Cardiac Ultrasound Clinic IV**

10 Hours

Prerequisites: DMS 236  
30 hours weekly (0-30)

The clinical component of Cardiac Ultrasound Imaging IV is a supervised clinical experience which will cover cardiac scanning techniques and protocols with emphasis on stress, transesophageal, intra-operative, and contrast echocardiograms, echo-guided maneuvers, and provocative measures utilized with echocardiograms.