

# DIAGNOSTIC MEDICAL SONOGRAPHY (DMS)

## Course Descriptions

### **DMS 103. Ultrasound Physics and Instrumentation I. 2 Credit Hours.**

Topics covered in this course include basic physical principles of ultrasound, Doppler principles and ultrasound equipment controls. Emphasis will be placed on control manipulation and parameters required for optimum sonographic examinations. (Credit is only allowed for either DMS 103 and DMS 104, or ULT 104.)

Prerequisites: Current enrollment in the Diagnostic Medical Sonography program or permission of the program director and Reading Proficiency

### **DMS 104. Ultrasound Physics and Instrumentation II. 2 Credit Hours.**

Ultrasound Physics and Instrumentation II addresses transducer parameters, principles of ultrasound instruments and modes of operation, principles of Doppler techniques, methods of Doppler flow analysis and acoustical artifacts. (Credit is only allowed for either DMS 103 and DMS 104, or ULT 104.)

Prerequisites: DMS 103 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 105. Medical Sonography I. 3 Credit Hours.**

This course will present normal sectional anatomy and patterns for the most common examinations within abdominal and OB/GYN sonography. An introduction to clinical applications will include the pathophysiologic basis, clinical signs and symptoms and typical sonographic patterns related to the most common abnormalities encountered in the clinical environment. (Credit is only allowed for either DMS 105 and DMS 106, or ULT 101.)

Prerequisites: Current enrollment in the Medical Sonography learning concentration, Diagnostic Medical Sonography program or permission of the program director and Reading Proficiency

### **DMS 106. Medical Sonography Scanning Techniques I. 2 Credit Hours.**

Medical Sonography Scanning Techniques I addresses laboratory demonstrations and student performance of standard protocols for the most common abdominal, obstetric and gynecologic sonographic examinations, with emphasis on normal anatomy and pattern recognition. Additional lab hours required. (Credit is only allowed for either DMS 105 and DMS 106, or ULT 101.)

Prerequisites: Current enrollment in the Medical Sonography learning concentration or permission of the program director and Reading Proficiency

### **DMS 107. Medical Sonography Practicum I. 2 Credit Hours.**

Observation and initial scanning experience of abdominal, obstetrical and gynecologic sonographic examinations. Additional hours required. (Credit is only allowed for either DMS 107 or ULT 102.)

Prerequisites: Current enrollment in the Medical Diagnostic Sonography learning concentration or permission of the program director and Reading Proficiency

### **DMS 108. Medical Sonography II. 3 Credit Hours.**

Further study of the clinical applications of abdominal, obstetric and gynecologic sonography. Lecture topics include the pathologic basis, clinical signs and symptoms, related diagnostic procedures and typical sonographic patterns of common and rare conditions and abnormalities encountered in the clinical setting. (Credit is only allowed for either DMS 108 or ULT 201.)

Prerequisites: DMS 105 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 109. Medical Sonography Scanning Techniques II. 1 Credit Hour.**

Laboratory demonstration and student performance of standard protocols for superficial structures and less common procedures within abdominal and OB/GYN sonography, with emphasis on normal anatomy and pattern recognition. Additional lab hours required.

Prerequisites: DMS 106 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 110. Medical Sonography Clinical Applications. 3 Credit Hours.**

Medical Sonography Clinical Applications incorporates a review of abnormal abdominal sonographic examinations in order to further develop the critical thinking skills required to correlate the clinical history, clinical signs and symptoms, and results of other diagnostic tests with the results of the sonographic examination. (Credit is only allowed for either DMS 110 or ULT 209.)

Prerequisites: DMS 105 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 111. Medical Sonography Practicum II. 3 Credit Hours.**

Clinical performance of abdominal, obstetric and gynecologic sonographic examinations under the supervision of experienced sonographers. Additional hours required. (Credit is only allowed for either DMS 111 or ULT 202.)

Prerequisites: DMS 107 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 112. Cardiac Sonography I. 3 Credit Hours.**

This course will present normal sectional anatomy, hemodynamics, patient assessment and diagnostic testing related to cardiac sonography. An introduction to clinical applications will include the pathophysiologic basis, clinical signs and symptoms and typical findings related to the most common types of adult cardiac disease.

Prerequisites: Current enrollment in the Cardiac learning concentration, Diagnostic Medical Sonography program or permission of the program director and Reading Proficiency

### **DMS 113. Cardiac Sonography Scanning Techniques I. 2 Credit Hours.**

Cardiac Sonography Scanning Techniques I addresses laboratory demonstrations and student performance of standard protocols for transthoracic adult cardiac sonographic examinations, with emphasis on normal 2-D, M-Mode and Doppler pattern recognition. Additional lab hours required.

Prerequisites: Current enrollment in the Cardiac learning concentration or permission of the program director and Reading Proficiency

### **DMS 114. Cardiac Sonography Practicum I. 2 Credit Hours.**

Observation and initial scanning experience of transthoracic adult cardiac sonographic examinations. Additional hours required.

Prerequisites: Current enrollment in the Cardiac Sonography learning concentration, Diagnostic Medical Sonography Program or permission of the program director and Reading Proficiency

### **DMS 115. Cardiac Sonography II. 3 Credit Hours.**

Presentation of the clinical applications of cardiac sonography including the pathophysiologic basis, clinical signs and symptoms and typical findings related to acquired and congenital adult cardiac disease.

Prerequisites: DMS 112 with a minimum grade of "C" or permission of the program director and Reading Proficiency

### **DMS 116. Cardiac Sonography Scanning Techniques II. 1 Credit Hour.**

Laboratory demonstration and performance of pulsed and continuous wave Doppler examinations and less common protocols in cardiac sonography including stress echo and the use of contrast agents. Additional lab hours required.

Prerequisites: DMS 113 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 117. Cardiac Sonography Clinical Applications. 3 Credit Hours.**

Cardiac Sonography Clinical Applications incorporates a review of abnormal cardiac sonographic examinations in order to further develop the critical thinking skills required to correlate the clinical history, clinical signs and symptoms, and results of other diagnostic tests with the results of the sonographic examination.

Prerequisites: DMS 112 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 118. Cardiac Sonography Practicum II. 3 Credit Hours.**

Clinical performance of transthoracic adult cardiac sonographic examinations under the supervision of experienced sonographers. Additional hours required.

Prerequisites: DMS 114 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 126. Introduction to Vascular Sonography. 3 Credit Hours.**

Introduction to Vascular Sonography addresses normal sectional anatomy, hemodynamics, patient assessment and diagnostic testing related to Vascular Technology. An introduction to clinical applications will include the pathophysiologic basis, clinical signs and symptoms and typical findings related to the most common vascular examinations.

Prerequisites: Current enrollment in the Cardiac learning concentration, Diagnostic Medical Sonography program or permission of the program director, and Reading Proficiency

**DMS 127. Introduction to Sonography. 3 Credit Hours.**

Introduction to Sonography will include general pathology and pathophysiology, ultrasound terminology, clinical laboratory tests and diagnostic procedures, patient interview and examination techniques, chart and referral evaluation and embryology. In addition, the course will cover topics including psychological support, professional interaction skills, multicultural diversity, professional codes of conduct and scopes of practice, pertinent legal principles, administrative procedures and trends in healthcare systems. (Credit is only allowed for DMS 127 or DMS 101 and DMS 102.)

Prerequisites: Current enrollment in the Cardiac learning concentration, Diagnostic Medical Sonography program or permission of the program director and Reading Proficiency

**DMS 128. Introduction to Vascular Sonography Scanning Techniques. 1 Credit Hour.**

Introduction to Vascular Sonography Scanning Techniques addresses laboratory demonstrations and student performance of standard vascular protocols for the most common venous and arterial examinations, with emphasis on recognition of normal gray scale and Doppler patterns. (Credit is only allowed for either DMS 128 or DMS 120.)

Prerequisites: Current enrollment in the Cardiac learning concentration, Diagnostic Medical Sonography program or permission of the program director and Reading Proficiency

**DMS 201. Ultrasound Physics and Instrumentation III. 2 Credit Hours.**

Ultrasound Physics and Instrumentation III addresses quality assurance procedures, biological effects, 3-D ultrasound applications and a general review in preparation for the certification examinations in physics and instrumentation.

Prerequisites: DMS 104 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 202. Medical Sonography III. 2 Credit Hours.**

A study of the clinical applications of superficial structures, including the pathophysiologic basis, clinical signs and symptoms, related diagnostic tests and typical sonographic patterns of common and rare conditions encountered in the clinical setting. Additional hours required. (Credit is only allowed for either DMS 202 or ULT 210.)

Prerequisites: DMS 108 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 203. Medical Sonography Practicum III. 4 Credit Hours.**

A continuation of clinical experience achievement of minimal competency in the most common examinations. Additional hours required. (Credit is only allowed for either DMS 203 or ULT 207.)

Prerequisites: DMS 111 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 204. Medical Sonography IV. 4 Credit Hours.**

This course will present normal sectional anatomy and patterns, and the clinical applications for neonatal neurosonography and the pediatric abdomen and pelvis. The remainder of the course will consist of review in preparation for the certification examinations in Abdomen and OB/GYN sonography.

Prerequisites: DMS 202 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 206. Medical Sonography Practicum IV. 3 Credit Hours.**

Students will complete all clinical competency requirements for the specialties of abdomen, OB/GYN and superficial structures. Additional hours required.

Prerequisites: DMS 203 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 207. Cardiac Sonography III. 2 Credit Hours.**

Further study of the clinical applications of cardiac sonography including pediatric applications and other advanced and/or rare imaging techniques. Additional hours required.

Prerequisites: DMS 115 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 208. Cardiac Sonography Practicum III. 4 Credit Hours.**

A continuation of clinical experience with achievement of minimal competency in the most common types of examinations. Additional hours required.

Prerequisites: DMS 118 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 209. Cardiac Sonography IV. 4 Credit Hours.**

Further study of the clinical applications of cardiac sonography, including fetal echocardiography. The remainder of the course will consist of review in preparation for the certification examination in cardiac sonography.

Prerequisites: DMS 207 with a minimum grade of "C" or permission of the program director and Reading Proficiency

**DMS 211. Cardiac Sonography Practicum IV. 3 Credit Hours.**

Students will complete all clinical competency requirements for adult cardiac sonography. Additional hours required.

Prerequisites: DMS 208 with a minimum grade of "C" or permission of the program director and Reading Proficiency