

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 119. Vascular Technology I. 3 Credit Hours.

Vascular Technology I examines the normal anatomy, pathology, and hemodynamics of the cardiovascular system including the extracranial cerebrovascular system as well as the upper and lower extremities. Additional emphasis will be on perfusion and function of these anatomical systems.

Prerequisites: Entry into the Diagnostic Medical Sonography program and Reading Proficiency

DMS 120. Vascular Technology Scanning Techniques I. 2 Credit Hours.

Vascular Technology Scanning Techniques I introduces concepts of sonographic evaluation including grey scale, color Doppler, and pulse wave of the cerebrovascular and cardiovascular systems. Students will perform basic scanning procedures and familiarize themselves with anatomy.

Prerequisites: Entry into the Diagnostic Medical Sonography program and Reading Proficiency

DMS 121. Vascular Technology Practicum I. 2 Credit Hours.

Vascular Technology Practicum I introduces conduction of routine scanning protocols including hemodynamic patterns of the extracranial cerebrovascular system and the upper and lower extremities. Students will be placed in a clinical setting under the supervision of a registered sonographer.

Prerequisites: Entry into the Diagnostic Medical Sonography program and Reading Proficiency

DMS 122. Vascular Technology II. 3 Credit Hours.

Vascular Technology II examines the sonographic appearance of aortoiliac and renal vasculature which includes hemodynamic concepts. Students will evaluate pathophysiologic findings, clinical history, and typical sonographic findings related to disease of the aortoiliac and renal vasculature.

Prerequisites: DMS 119 with a minimum grade of "C" and Reading Proficiency

DMS 123. Vascular Technology Scanning Techniques II. 2 Credit Hours.

Vascular Technology Scanning Techniques II implements laboratory demonstration and performance of standard protocols for aortoiliac and renal vasculature sonograms including grey scale, color Doppler, and pulse wave of the anatomy. Students will practice protocols to prepare for clinical rotations.

Prerequisites: DMS 120 with a minimum grade of "C" and Reading Proficiency

DMS 125. Vascular Technology Practicum II. 3 Credit Hours.

Vascular Technology Practicum II requires the clinical performance of vascular procedures under the supervision of a registered sonographer including aortoiliac and renal vasculature. Students will learn hemodynamic patterns of vasculature.

Prerequisites: DMS 121 with a minimum grade of "C" 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 130. Introduction to Medical and Cardiac Sonography. 3 Credit Hours.

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

Prerequisites: DMS 127 with a minimum grade of "C" 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

DMS 212. Vascular Technology III. 2 Credit Hours.

Vascular Technology III examines the normal anatomy, pathology, and hemodynamics of the cerebrovascular and cardiovascular systems including abdominal Doppler applications. Additional emphasis will be on perfusion and function of these anatomical systems.

Prerequisites: DMS 122 with a minimum grade of "C" and Reading Proficiency

DMS 213. Vascular Technology Practicum III. 4 Credit Hours.

Vascular Technology Practicum III is a continuation of clinical experience involving scanning of vascular sonography including mesenteric, intracranial cerebrovascular system, and hepatoportal vasculature. Students will be under the guidance of a registered sonographer.

Prerequisites: DMS 125 with a minimum grade of "C" and Reading Proficiency

DMS 214. Vascular Technology IV. 4 Credit Hours.

Vascular Technology IV will prepare students for the certification examination in Vascular Technology. Students will examine the sonographic appearance of therapeutic interventions, intraoperative monitoring, and the use of ultrasound contrast agents of the cardiovascular and cerebrovascular systems.

Prerequisites: DMS 212 with a minimum grade of "C" and Reading Proficiency

DMS 215. Vascular Technology Clinical Applications. 3 Credit Hours.

Vascular Technology Clinical Applications incorporates a review of abnormal vascular 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 212 with a minimum grade of "C" and Reading Proficiency

DMS 216. Vascular Technology Practicum IV. 3 Credit Hours.

Vascular Technology Practicum IV requires students to complete all clinical competency requirements for the specialty of Vascular Technology including the extracranial and intracranial cerebrovascular system, aortoiliac, upper extremity, lower extremity, and abdominal anatomy. Students will be guided by a registered sonographer.

Prerequisites: DMS 213 with a minimum grade of "C" and Reading Proficiency