

Diagnostic Medical Sonography (DMS) - Courses

Courses

DMS 301 Cr.3

Introduction to Diagnostic Medical Ultrasound

In this course students will prepare for the new and challenging demands of sonography training in a hospital. Clinical policies and procedures are emphasized. Course content includes materials emphasizing personal adaptation skills and staff development issues, nursing procedures, ethics, and skills to become a better student. An overview of basic sonographic terminology, technique, and equipment form the framework for future study. Students will have the opportunity to demonstrate their knowledge of sterile technique. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 302 Cr.3

Vascular Sonography I

Hemodynamics of the arterial and venous vasculature will be discussed. Lower extremity venous normal and abnormal will be discussed. Extracranial and intracranial cerebrovascular anatomy, normal and abnormal will be discussed. Students will become familiar with the clinical symptoms and specific ultrasound protocols for normal and abnormal cases associated with lower extremity venous and cerebrovascular disease. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 303 Cr.3

Vascular Sonography II

Peripheral vascular direct and indirect, lower extremity arterial, upper extremity arterial, and upper extremity venous examinations, normal and abnormal will be discussed. Students will become familiar with the clinical symptoms and specific ultrasound protocols for normal and abnormal cases associated with peripheral vascular disease. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 304 Cr.3

Sonographic Principles and Instrumentation

This course enables students to become familiar with the physical principles governing the use of medical ultrasound equipment. Emphasis will be on diagnostic imaging systems, but students will also become acquainted with therapeutic devices including shock wave and thermal delivery systems. Basic principles of acoustic transmission and reflection in tissues are covered at an elementary level. Design and performance of transducers, pulse-echo imaging equipment, Doppler and color flow equipment, and physical therapy systems are emphasized. The physics leading to image artifacts is described, as are methods for evaluating performance of ultrasound devices. Finally, acoustical exposure measurements and levels from diagnostic equipment are discussed, as well as biological effects and risk. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 310 Cr.3

General/Vascular Clinical Education I

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for this Practicum I include abdominal imaging, OB/GYN imaging, and vascular technology. During this practicum, students will be assigned competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 311 Cr.3

General/Vascular Clinical Education II

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum II include abdominal imaging, OB/GYN imaging and vascular technology. During this practicum, students will be assigned competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 312 Cr.3

General/Vascular Clinical Education III

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum III include abdominal imaging, OB/GYN imaging and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 313 Cr.3

Echocardiography/Vascular Clinical Education I

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum I includes adult echocardiography and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 314 Cr.3

Echocardiography/Vascular Clinical Education II

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum II includes adult echocardiography and vascular technology. During this practicum, students will be assigned competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 315 Cr.3

Echocardiography/Vascular Clinical Education III

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum III includes adult echocardiography, pediatric echocardiography, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 316 Cr.3

Cardiovascular Physiology in Sonography

This course will discuss cardiac physiology, mechanical events, timing of mitral and aortic flow, auscultation, phonocardiography, hemodynamics and Doppler applications to echocardiography, Doppler methods and formulas, concepts of dP/dt, index of myocardial performance, and evaluation of LV systolic and diastolic filling. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 317 Cr.3

Cardiovascular Principles in Sonographic Imaging

This course will discuss cardiovascular anatomy, ultrasound image orientation, scan planes, routine views, sonographic anatomy, the normal ultrasound exam protocol for the echocardiogram, left ventricle function indicators, hemodynamics and Doppler applications to echocardiography, spectral Doppler measurements, indirect measurements, Doppler methods, right heart pressures, and introductory echocardiography findings in the following disease states: aortic stenosis, aortic regurgitation, mitral stenosis, and mitral regurgitation assessment. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 318 Cr.3

Embryology of the Heart in Echocardiography

This course is a study of the development of the cardiovascular system and the pediatric heart to include normal anatomy and congenital heart disease. This course will cover embryology of the heart, the pediatric echocardiography exam and protocols, and congenital heart disease. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 319 Cr.3

Adult Echocardiography I

This course will discuss cardiac anatomy and physiology, prosthetic valves, diastology, and cardiac valvular pathology seen on echocardiograms in the adult population. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 320 Cr.3

Pediatric Echocardiography I

This course will introduce the student echocardiographer to various types of congenital heart disease. The types of congenital heart disease to be discussed in this course include, but are not limited to, patent ductus arteriosus (PDA), atrial septal defect (ASD), ventricular septal defect (VSD), pulmonic stenosis (PS), coarctation of the aorta, transposition of the great arteries (TGA), double outlet right ventricle (DORV), and double outlet left ventricle (DOLV). Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 321 Cr.3

Adult Echocardiography II

This course will discuss cardiac pathology seen on echocardiograms in the adult population including cardiomyopathies (hypertrophic, dilated, restrictive), pericardial disease, endocarditis, and cardiac masses. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 326 Cr.3

Abdominal Sonography I

Anatomy, physiology, pathology, and pathophysiology seen on normal and abnormal sonograms of the chest cavity, peritoneal and retroperitoneal spaces, aorta and mesenteric vessels, and the liver will be discussed. Students will become familiar with the clinical symptoms, lab values, and specific ultrasound protocols for normal and abnormal cases. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 327 Cr.3

Abdominal Sonography II

Anatomy, physiology, pathology, and pathophysiology seen on normal and abnormal sonograms of the kidneys, biliary system, pancreas, spleen, and interventional procedures will be discussed. Students will become familiar with the clinical symptoms, lab values, and specific ultrasound protocols for normal and abnormal cases. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 330 Cr.3

OB/GYN Sonography I

This course focuses on the normal gross, relational, and sonographic anatomy of the female pelvis. Gynecologic pathologies and infertility are discussed. Physiology and related laboratory and clinical findings for disease processes are emphasized as related to the female pelvis. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 331 Cr.3

OB/GYN Sonography II

The student will gain an understanding of embryology, sonographic evaluation, and complications during the first trimester. Labor, fetal presentation, and fetal anomalies as visualized on ultrasound during the second and third trimester will also be discussed. Students will become familiar with central nervous system anomalies, GI anomalies, GU anomalies, musculoskeletal anomalies, anomalies associated with multiple gestations, and placental pathology as they appear on ultrasound exams. Students will have the opportunity to practice biometric measurements on an obstetrical phantom during this course. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 332 Cr.3

OB/GYN Sonography III

This course will discuss the role of ultrasound in evaluating maternal complications in pregnancy, needle guidance procedures (CVS sampling, Amniocentesis, PUBS, therapy), and in monitoring high risk patients. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 401 Cr.3

Vascular Sonography III

A review of hemodynamics, abdominal, penile, organ transplant Doppler, and vascular statistics will be discussed. Students will become familiar with the clinical symptoms and specific ultrasound protocols for normal and abnormal cases associated with vascular disease involving the above areas of interest. Lect. 2, Lab 2. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 402 Cr.3

Seminar in Professional Development

This course will familiarize the diagnostic medical sonography student with the history of the profession and professional societies associated with the field of diagnostic medical sonography. Students will learn how to be a professional and how to positively influence the field of diagnostic medical sonography. Students will also become familiar with resume creation and interviewing techniques. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 403 Cr.3

Seminar in Management, Research, and Education

This course will familiarize the diagnostic medical sonography student with educational and management issues in the profession. Students will problem solve management issues as they relate to diagnostic medical sonography and will explore educational strategies employed in ultrasound education. Students will participate in department quality assurance projects and educational course development projects. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 404 Cr.3

Seminar in Advanced Medical Imaging: Vascular

The student will be exposed to normal anatomy and pathology cases combining diagnostic medical sonography, computed sonography, and magnetic resonance imaging. The student will gain an understanding of how a diagnosis is made and patients are managed based on findings from multiple imaging modalities. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 410 Cr.3

General/Vascular Clinical Education IV

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum IV include abdominal imaging, OB/GYN imaging, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 411 Cr.3

General/Vascular Clinical Education V

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum V include abdominal imaging, OB/GYN imaging, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 412 Cr.3

General/Vascular Clinical Education VI

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum VI include abdominal imaging, OB/GYN imaging, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 413 Cr.3

Echocardiography/Vascular Clinical Education IV

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum IV includes adult echocardiography, pediatric echocardiography, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 414 Cr.3

Echocardiography/Vascular Clinical Education V

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum V includes adult echocardiography, pediatric echocardiography, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Spring.

DMS 415 Cr.3

Echocardiography/Vascular Clinical Education VI

Students are scheduled for clinical practicum at participating clinical education centers. Clinical experience rotations for Practicum VI includes adult echocardiography, pediatric echocardiography, and vascular technology. During this practicum, students will be assigned clinical competencies and objectives to complete. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 420 Cr.3

Specialized Sonography

In this course the student studies the embryology, structure, physiology, and pathology of the breast, thyroid, and scrotum. Normal, abnormal gross, cross-sectional, and relational sonographic anatomy will be explored. Invasive and intraoperative sonographic techniques will be discussed as they relate to breast, thyroid, and scrotal sonography exams. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 421 Cr.3

Seminar in OB/GYN: Introduction to Fetal Echocardiography

This course will discuss the role of ultrasound in evaluating the fetus for various genetic syndromes and understanding inheritance patterns. Advanced study of the fetal heart, to include normal anatomy and congenital heart disease, will be discussed including embryology of the heart, the fetal echocardiography exam and protocols, and congenital heart disease. This course also gives students a board review to assist in preparing to take the ARDMS OB/GYN specialty examination. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 422 Cr.3

Introduction to Neurosonography

This course will cover the anatomy, physiology, pathology, pathophysiology, and the sonographic appearance of the normal and abnormal neonatal brain and spine. Students will become familiar with the normal ultrasound exam protocol and how to modify the exam for pathological conditions. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 423 Cr.3

Introduction to Musculoskeletal Sonography

This course will introduce students to an array of musculoskeletal sonographic evaluations including anatomy, physiology, and sonography protocols and procedures. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.

DMS 428 Cr.3

Abdominal Sonography III

Anatomy, physiology, pathology, and pathophysiology seen on normal and abnormal sonograms of the adrenals, male pelvis, and pediatric specialty exams will be discussed. Students will become familiar with the clinical symptoms, lab values, and specific ultrasound protocols for normal and abnormal cases. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 430 Cr.3

Stress Echocardiography

In this course the student will prepare for the new and challenging demands of sonography training in a hospital with emphasis on stress echocardiography. Clinical policies and procedures are emphasized. Course content includes materials emphasizing personal adaptation skills and staff development issues, nursing procedures, ethics, and skills to become a better student. An emphasis is put on coronary anatomy and wall segment distribution. An overview of basic sonographic terminology, technique, and equipment form the framework for future study. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 431 Cr.3

Pediatric Echocardiography II

This course will introduce the student echocardiographer to various types of congenital heart disease. The types of congenital heart disease to be discussed in this course include, but are not limited to, univentricular heart, right ventricular hypoplasia, left ventricular hypoplasia, inflow anomalies, outflow anomalies, total anomalous pulmonary venous return and coronary artery anomalies, conotruncal anomalies, abnormalities within the cardiac chambers, proximal vessels and thorax, cardiomyopathies, postoperative evaluations, and complex combinations of previously discussed congenital heart defects. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 432 Cr.3

Adult Echocardiography III

This course will discuss cardiac anatomy and pathology as it is seen on echocardiography. This course will focus on intraoperative cardiac ultrasound, congenital heart disease in the adult, and guidance for invasive procedures and contrast echocardiography. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Fall.

DMS 433 Cr.3

Special Procedures in Echocardiography

This course will cover topics for senior students moving from being a student to an entry level sonographer. The course will include the fundamental concepts for intravenous catheter insertion, aseptic technique, and IV contrast administration. A demonstration and lecture on strain imaging and the use of 3D/4D will be presented. There will be a research component for the Intersocietal Accreditation Commission in Echocardiography. Prerequisite: admission to Diagnostic Medical Sonography Program. Offered Summer.