Course Descriptions

DMS101M - Introduction to Ultrasound ***Clock Hours: 22***

This class is an introduction to the theory and practice of ultrasound in the current health care system. It details the basic concepts of the physics of ultrasound and anatomical, directional and descriptive terms, with emphasis on ultrasound terminology. The students will also learn the standards of scanning and correct ergonomics. The students will be introduced to professional sonography societies and encouraged to join. The students will be given lectures that cover medical law, code of ethics, professionalism, and patient care specific to sonography. The student will also learn about the importance of cultural competency.

Pre-requisite: Admission to the Program

DMS102M - Abdomen ***Clock Hours: 58***

This class details the anatomy, physiology and pathology of the following organs: liver, gallbladder/biliary system, pancreas, genitourinary system, spleen, adrenals, and retroperitoneum. Detailed instruction is given in the basic methods of routine abdominal examinations. The students will learn the sonographic appearance of the abdominal organs in both normal and pathological situations. Basic Doppler flow characteristics are also discussed with more emphasis on Doppler in the 4th quarter.

Pre-requisite: Admission to the Program

Co-requisite: DMS102L, DMS104

DMS103M - Sectional Anatomy ***Clock Hours: 57***

This course will teach students to recognize anatomy in sectional planes, including transverse, sagittal and coronal planes. The students will be instructed in sectional anatomy in the following areas: head, neck, thorax, abdomen, and pelvis. Pictorial slabs as well as drawings, CT, MRI, PET and ultrasound images will be used to enhance the students' learning experience.

Pre-requisite: Admission to the Program

DMS105 - Gynecology/OB 1 ***Clock Hours: 28***

This class details anatomy, physiology and pathology of the female reproductive organs, pelvic musculature and pelvic ligaments. Detailed instruction is given in basic methods of routine pelvic examinations including transvaginal exams. The student will be able to identify the sonographic appearance and Doppler characteristics of the pelvic organs in both normal and abnormal conditions. This course also details the anatomy, embryology, physiology and pathology of the first trimester pregnancy. The student will receive detailed instruction in basic methods of first trimester obstetric examinations, including transvaginal exams. The students will be able to recognize the ultrasound appearance of first trimester pregnancy and female pelvis in both normal and abnormal situations.

Pre-requisite: Successful completion of first term

DMS106 - Obstetric 2/3 ***Clock Hours: 73***

In this class the students will be instructed in detail the anatomy, physiology, pathology and anomalies of the 2nd and 3rd trimester pregnancy. The students will be instructed in the appropriate methods for obtaining fetal measurements and detailed fetal anatomy, as well as in assessing maternal structures, the placenta and Doppler evaluation during pregnancy. The students will be taught to recognize both normal and abnormal conditions associated with pregnancy.

Pre-requisite: DMS105

DMS108 - Superficial Structures ***Clock Hours: 37***

This class details the anatomy, physiology and pathology of the thyroid gland, scrotum, breast and prostate gland. The student will be able to identify the sonographic appearance and Doppler characteristics of these structures in normal and pathological conditions. The student will receive detailed instruction in basic methods of small parts examinations.

Pre-requisite: Successful completion of second term

DMS109 - Ultrasound Physics ***Clock Hours: 75***

The goal of this class is to teach the students the principles and instrumentation of ultrasound. The students will learn to recognize and correct artifacts. The students will be instructed in the physics of ultrasound, instrumentation, Doppler, hemodynamics, safety issues, biological effects, emerging technologies and quality assurance and performance.

Pre-requisite: Successful completion of second term

DMS111M - Pediatrics and Miscellaneous ***Clock Hours: 50***

This class will help the students to recognize the sonographic appearance of normal and pathological conditions of the abdomen, pelvis, hips, spine, neonatal brain, musculoskeletal structures and GI tract. This class will discuss normal anatomy and pathology of the following organs/areas: Knee (popliteal space), GI tract, appendix, abdominal wall, non-cardiac chest, MSK system and miscellaneous lesions. The student will learn to recognize the normal and abnormal sonographic appearance of these structures/areas and they will be instructed in the basic scanning methods of them as well. In addition, the student will continue to build on the knowledge of vessel, anatomy, physiology and pathology discussed in Abdomen. The students will receive instruction on the theory and use of Doppler, color Doppler and power Doppler during an abdominal Doppler evaluation. The following areas will be covered: aorta (and branches), IVC, the portal venous system, TIPS, organ transplants, renals and renal arteries and veins. The students will be able to recognize normal and abnormal sonographic appearances of abdominal vasculature. An introduction to vascular, including peripheral arteries, veins and Doppler evaluation will be included in this course.

Pre-requisite: Successful completion of second term

Co-requisite: DMS11L

DMS112M - Registry Review (Physics) ***Clock Hours: 26***
DMS112M - Registry Review (Abd & OB/Gyn) ***Clock Hours: 46***

This class serves as a review in preparation for the ARDMS examinations. Students will be given review exercises in the areas of Abdomen, OB/Gyn and Physics. The student will take “mock registries” with at least a 75% average in order to pass the class.

DMS104 - Clinical Externship ***Clock Hours: 279***

The first quarter of clinical training the student will concentrate mostly on abdominal scanning and equipment competencies. The majority of competencies focus on abdominal scanning including liver, gallbladder, aorta, pancreas, renals and spleen. Students will be given detailed instruction in scan techniques and clinical skills in the above areas. The students are also given detailed instruction in the operation of the sonographic equipment and correct ergonomics. All competencies must be completed 5 successfully completed to pass the clinical portion of the quarter. Basic Doppler evaluation will be taught.

Pre-requisite: Admission to the Program

Pre-requisite: DMS102M, DMS102L

DMS107 - Clinical Externship II ***Clock Hours: 355***

The second quarter of clinical training concentrates on Abdomen and OB/Gyn scanning. Students will be given detailed instruction in scan techniques and clinical skills in the above areas. Competencies are in the above areas including transvaginal examination and must be successfully completed to pass the clinical portion of the quarter. Doppler evaluation of these organs/areas will be included.

Pre-requisite: DMS104

DMS110 – Clinical Externship III ***Clock Hours: 330***

The third quarter of clinical training concentrates on Abdomen, OB/Gyn and Superficial structure scanning. Students will be given detailed instruction in scanning techniques and clinical skills including Doppler in the above areas. All required competencies must be completed in the above areas to pass the clinical portion of this quarter.

Pre-requisite: DMS107

DMS113 – Clinical Externship IV ***Clock Hours: 348***

The fourth quarter of clinical training includes competencies in the areas of abdomen, superficial structures, MSK and OB/Gyn (with 3D imaging). More detailed instruction will be given for Doppler evaluation of the portal and hepatic vessels, renal vessels and other abdominal vessels as encountered in the clinical area. ARFI scan technique and needle procedure guidance will also be taught. Students will focus on fine tuning their scanning skills in these areas. All competencies must be successfully completed to pass the clinical portion of this quarter.

Pre-requisite: DMS110

DMS102L - Lab 1 ***Clock Hours: 32***

This lab is structured to ensure students have acquired the sonographic and clinical skills necessary to achieve clinical competence. The focus is on abdominal scanning including the right upper quadrant (liver, gallbladder, pancreas), aorta, renals, bladder, adrenals, and spleen. The students are also given detailed instruction in the operation of the sonographic equipment and correct ergonomics. Basic Doppler evaluation will be taught. All lab assessments must be successfully completed to pass the Lab.

Pre-requisite: Admission to the Program

Co-requisite: DMS102M, DMS104

DMS105L - Lab 2 ***Clock Hours: 24***

This lab is structured to ensure students have acquired the sonographic and clinical skills necessary to achieve clinical competence. This lab concentrates on OB/Gyn scanning techniques and associated clinical skills. Doppler evaluation of these organs/areas will be included. All lab assessments must be successfully completed to pass the Lab.

Pre-requisite: DMS102L

DMS108L - Lab 3 ***Clock Hours: 12***

This lab is structured to ensure students have acquired the sonographic and clinical skills necessary to achieve clinical competence. This lab concentrates on scanning superficial structures and includes Doppler techniques for these structures. All lab assessments must be successfully completed to pass the Lab.

Pre-requisite: DMS105L

DMS111L - Lab 4 ***Clock Hours: 10***

This lab is structured to ensure students have acquired the sonographic and clinical skills necessary to achieve clinical competence. This lab will concentrate on the areas of abdomen Doppler, MSK and 3D imaging. Detailed instruction will be given for Doppler evaluation of the portal and hepatic vessels, renal vessels and mesenteric vessels. Acoustic Radiation Force Imaging (ARFI) scan technique, non-cardiac chest and needle procedure guidance will also be taught. Students will focus on fine tuning their scanning skills. All lab assessments must be successfully completed to pass the Lab.

Pre-requisite: DMS108L