

DIAGNOSTIC MEDICAL SONOGRAPHY (DMS)

DMS-1000 Medical Terminology (1-12 Credits)

This course is designed to assist the student to acquire the medical language required in any allied health profession. The student should discover the etymology, history of words, and that most medical words have been adopted from Latin and Greek origin. By learning these word elements and commonly used prefixes and suffixes, students will be able to define most medical terms. The content of this course is organized according to a systematic survey of organ systems of the body.

Typically offered: All Sessions

DMS-1010 Abdominal Sonography I (1-12 Credits)

This course is designed to introduce the student to sonographic imaging of the abdomen with a focus on relational anatomy of the abdominal organs. Emphasis is placed on the normal sonographic appearance of the abdominal organs and vasculature along with normal clinical and laboratory findings specific to the system. This includes the liver, gall bladder and biliary system, pancreas, spleen, aorta, inferior vena cava and kidneys. Lecture time may be complemented with instructor directed hands-on scanning in the student lab. Pre-Requisite: BIO 1000 Anatomy & Physiology, ENG 1000 College Writing, PHY1000 Physical Science & Astronomy, MAT 1000 Excursions in Math.

Typically offered: All Sessions

DMS-1020 Obstetrics and Gynecological Sonography I (1-12 Credits)

This course is designed to familiarize the student with normal sonographic imaging of the female reproductive system. They should learn the basic foundation of patient preparation, scanning techniques and protocols for performing obstetrics and gynecologic exams. Appropriate usage of transabdominal (TAS) and/or transvaginal (TVS) probes are covered. Study content includes the normal anatomy of the female reproductive system, as well as its anatomic relationship to other structures in the pelvis. Various congenital anomalies of the uterus, fallopian tubes and ovaries are also covered. Sonographic evaluation of normal first, second and third trimester pregnancies are studied. Sonographic evaluation of abnormal first trimester pregnancies is also covered. Introduction of Neurosonography is implemented, including normal anatomy of the neonatal brain. Lecture time may be complemented with instructor directed hands-on scanning in the student lab. Pre-Requisite: BIO 1000 Anatomy & Physiology, ENG 1000 College Writing, PHY1000 Physical Science & Astronomy, MAT 1000 Excursions in Math.

Typically offered: All Sessions

DMS-1030 Sonographic Physics & Instrumentation I (1-12 Credits)

This course is designed to present the basic concepts and principles of ultrasound physics as a foundation for understanding image interpretation. The student should learn the wave theory of sound and how it travels in various media. They should gain knowledge of the principles of how piezoelectricity converts sound energy to electrical energy in ultrasound transducers. They should acquire an understanding of Doppler principles and how they relate to studying the hemodynamics of blood flow in the body. Pre-Requisite: BIO 1000 Anatomy & Physiology, ENG 1000 College Writing, PHY1000 Physical Science & Astronomy, MAT 1000 Excursions in Math.

Typically offered: All Sessions

DMS-1040 Cross Sectional Anatomy (1-12 Credits)

This course is designed to enable the student to conceptualize the major organs and vessels in the thoracic and abdominopelvic cavities in tomographic sections, using transverse (axial) sagittal, coronal, and oblique sections. Portions of the neck and brain will also be studied. Emphasis is placed on the anatomic relationships of the organs commonly scanned by sonography. Pre-Requisite: BIO 1000 Anatomy & Physiology, ENG 1000 College Writing, PHY1000 Physical Science & Astronomy, MAT 1000 Excursions in Math.

Typically offered: All Sessions

DMS-1050 Patient Care (1-12 Credits)

This course is designed to introduce the student to the fundamental principles of proper patient care. Content includes history of medical sonography, and the professional role of a medical sonographer in a lab. Concepts of sonographer-patient interactions are emphasized; including, maintaining privacy, utilizing proper body mechanics and maintaining aseptic techniques. The students should learn about HIPAA regulations and multicultural considerations in patient treatment.

Typically offered: All Sessions

DMS-1100 Medical Law and Ethics (1-12 Credits)

This course is designed to present the student with the legal and ethical implications of working in medical facilities. The student should learn basic legal principles and doctrines such as torts, professional liability insurance, and informed consent. Ethical issues that health educators, students, and clinicians are faced with in daily practice are covered. Liability, especially related to the imaging professions, are also emphasized.

Typically offered: All Sessions

DMS-1110 Abdominal Sonography II (1-12 Credits)

This course is designed as a continuation of abdominal sonography I, with an emphasis on recognizing pathologic changes on ultrasound scans of organs in the upper abdomen. The student reviews multiple images of various disease states and critically evaluates them using the sonographic criteria of SSALT -size, shape, acoustic characteristics, location and transonicity.

Typically offered: All Sessions

DMS-1120 Obstetrics and Gynecological Sonography II (1-12 Credits)

This course is designed as an extension of Ob/Gyn sonography I. Topics, focusing on pathologic conditions that can be determined by obstetric/gynecologic ultrasound scanning, are covered in this course. The student should learn to recognize abnormal and/or pathologic sonographic patterns of the female pelvis and to correlate these with patient history and lab values. Normal and abnormal 2nd and 3rd trimester pregnancy are discussed. They should learn to rule out anomalies by studying the components of a complete anatomy scan. Accurate assessment of gestational age through fetal biometry techniques, and complications of pregnancy are also covered. Abnormalities of the neonatal brain are included, as well.

Typically offered: All Sessions

DMS-1130 Sonographic Physics & Instrumentation II (1-12 Credits)

This course is designed as a continuation of sonographic physics and instrumentation I. The student should gain a comprehensive knowledge of ultrasound physics and instrumentation. It reinforces concepts and offers more advanced material in ultrasound theory and instrumentation, fluid hemodynamics, harmonics, cavitations, color flow Doppler spectral analysis, 3D and 4D ultrasound, etc. An emphasis is placed on preparing the student to pass the Sonography Principles and Instrumentation (SPI) examination of the American Registry of Diagnostic Medical Sonographers (ARDMS). Pre-requisite: DMS 1130 Sonographic Physics and Instrumentation I.

Typically offered: All Sessions

DMS-2040 Sonography of Superficial Structures (1-12 Credits)

Typically offered: All Sessions

DMS-2070 Echocardiography (1-12 Credits)

This course is designed to provide a basic foundation for ultrasound scanning of the thyroid, parathyroid glands, salivary glands, breast, prostate, and scrotum. It also includes new applications in the field of musculoskeletal ultrasound, including rotator cuff, baby hips, and carpal tunnel imaging. Normal sonographic anatomy is taught as well as common pathologic states found in these structures. Lecture time may be complemented with instructor directed hands on scanning in the student lab.

Typically offered: All Sessions

DMS-2090 Clinical Education II (1-12 Credits)

This clinical education course is designed to offer the student an extensive clinical experience in scanning abdomen (general), and/or superficial structures, and/or obstetrics and gynecology. The student is expected to incorporate all of the sonographic training, knowledge and experience acquired over the previous semester into this clinical rotation. The student should concentrate on achieving efficiency, self-confidence, ease of scanning and refinement of all acquired skills. The student is required to prepare protocols of exams that are performed, and assemble a portfolio of representative images and case reports. The clinical site may be a hospital, outpatient imaging center, or private doctor's office. The student is instructed on professional behavior expected at a clinical site, including attendance and dress code. The student is required to document all cases exposed to, and submit necessary evaluation forms.

Typically offered: All Sessions

DMS-2110 Vascular Ultrasound (1-12 Credits)

This course is designed to delve into the use of duplex Doppler ultrasound to interrogate the extracranial circulation of the brain, for cerebrovascular disease and arterial and venous circulation of the upper and lower extremities for peripheral vascular disease. Normal and pathological conditions are discussed in correlation with physical and clinical findings. Students will develop a clear understanding of the basic concepts in ultrasound assessment of pathological conditions of the vessels to focus on arteriosclerotic changes and the formation of deep venous thromboses. Lecture time may be complemented with instructor directed hands-on scanning in the student lab.

Typically offered: All Sessions

DMS-2140 Registry Review (1-12 Credits)

This course is designed to provide the student with an array of topics on professionalism. The role of professional organizations and journals, continuing education, resume writing, interviewing skills, and ergonomics at the workplace are among the topics discussed. Intensive reviews are performed to prepare the student to take the American Registry Diagnostic Medical Sonography (ARDMS) examinations in sonographic physics and instrumentation, abdomen and superficial structures and obstetrics and gynecology.

Typically offered: All Sessions

DMS-2150 Quality Management & Operational Issues (1-12 Credits)

This course content is designed to focus on the components of quality improvement (QI) programs in sonography. The role of the various team members in continuous quality improvement, including quality control and assurance checks, will be discussed as well as the legal and regulatory implications for maintaining appropriate quality care.

Typically offered: All Sessions

DMS-2170 Career Development (1-12 Credits)

This course is designed to introduce the student to a comprehensive approach to career development & planning. Students will examine self-awareness and career exploration which should then be incorporated into self-marketing techniques leading to long term effective career decision making. Students will be exposed to useful job searching techniques necessary in today's job marketplace.

Typically offered: All Sessions

DMS-2180 Case Studies Critique (1-12 Credits)

This course is designed to educate the student about the components of a case study in ultrasound. The objective of the case study method is to present to the class, as accurately as possible, the most complete description of a normal sonographic examination. While the students are assigned to an ultrasound clinical site, they assemble a portfolio of interesting cases. They research the etiology of the disease or anomaly from medical books and journals. They should correlate patient history, scanning techniques and protocols, proper positioning etc. In addition, they learn to critically analyze anatomical variants, normal, and pathological sonographic findings in images.

Typically offered: All Sessions

DMS-2190 Clinical Education III (1-12 Credits)

This clinical education course is designed to provide the student with the first exposure to abdominal, and /or obstetrics-gynecologic scanning in a clinical setting (s). The student should utilize didactic courses, and practice how to perform basic ultrasound exam protocols, and to safely and effectively operate ultrasound equipment. During the course the student should achieve some proficiency in obtaining basic ultrasound images. By the conclusion of the course, the student should be able to operate ultrasound equipment with a degree of ease, perform basic exams with supervision, and interact appropriately as a member of the ultrasound team. The clinical site may be a hospital, outpatient imaging center, or private doctor's office. The student is instructed on professional behavior expected at a clinical site, including attendance and dress code. The student is required to document all exams they are exposed to, and to submit, necessary evaluation forms.

Typically offered: All Sessions