Diagnostic Medical Sonography Program Courses (Radiation Sciences) (RSMS)

RSMS Courses

This is a list of courses with the subject code RSMS. For more information, see Radiation Sciences (Carver College of Medicine) in the catalog.

RSMS:3100 Cardiac Sonography I 3 s.h.
Anatomy and physiology of cardiovascular system imaged sonographically; proper sonographic imaging techniques, normal anatomy, exam protocol, and proper instrument settings; pathology and pathophysiology of common conditions related to adult cardiovascular system. Prerequisites: RSMS:3110 with a minimum grade of C.

RSMS:3101 Cardiac Sonography I Lab 2 s.h.
Laboratory-based learning and simulation experience involving basic sonographic adult cardiac imaging and clinical history analysis; students perform sonographic exams utilizing scanning simulation to develop skills in sonographic anatomy recognition, scan plane orientation, transducer manipulation, instrumentation, and exam protocols. Prerequisites: RSMS:3111 with a minimum grade of C. Corequisites: RSMS:3100.

RSMS:3110 Foundations of Sonography 3 s.h.
Sonography history, ergonomics, terminology, image orientation; basic theories of sound waves, echo production, transducers, equipment operation, body imaging, Doppler, hemodynamics.

RSMS:3111 Foundations of Sonography Lab 1 s.h.
Sonography history, ergonomics, terminology, image orientation; basic theories of sound waves, echo production, transducers, equipment operation, body imaging, Doppler, and hemodynamics. Corequisites: RSMS:3110.

RSMS:3115 Diagnostic Medical Sonography Clinical Internship I 2 s.h.
Introductory clinical experience in health care setting developing a basic understanding of sonography clinical environment and professional practice standards; applying patient care techniques and developing professional communication skills. Prerequisites: RSP:2120.

RSMS:3120 Abdominal Sonography I 3 s.h.
Embryology, anatomy, and physiology of various abdominal structures imaged sonographically; abdominal vasculature, hepatobiliary system, pancreas, urinary system, adrenals, spleen, male anatomy; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings. Prerequisites: RSMS:3110 with a minimum grade of C.

RSMS:3121 Abdominal Sonography I Lab 1 s.h.
Laboratory-based learning and simulation experience in sonographic abdominal imaging; students perform exams utilizing scanning simulation to develop skills in sonographic anatomy recognition, scan plane orientation, transducer manipulation, instrumentation, and exam protocols. Prerequisites: RSMS:3111 with a minimum grade of C. Corequisites: RSMS:3120.

RSMS:3130 Obstetrical and Gynecological Sonography I 3 s.h.
Embryology, anatomy, and physiology of the female reproductive system and developing fetus; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings. Prerequisites: RSMS:3110 with a minimum grade of C.

RSMS:3131 Obstetrical and Gynecological Sonography I Lab 1 s.h.
Laboratory-based learning and simulation experience involving basic sonographic obstetrical and gynecological imaging and clinical history analysis; students perform sonographic exams utilizing scanning simulation to develop skills in sonographic anatomy recognition, scan plan orientation, transducer manipulation, instrumentation, and exam protocols. Prerequisites: RSMS:3111 with a minimum grade of C. Corequisites: RSMS:3130.

RSMS:3140 Vascular Sonography I 3 s.h.
Anatomy and physiology of peripheral and cerebral vascular systems; analysis of hemodynamics, Doppler waveforms, pressure measurements, plethysmography, sonographic appearance, scanning techniques; evaluation of pathology and pathophysiology common to the lower extremity arterial and venous systems, and cerebrovascular system. Prerequisites: RSMS:3110 with a minimum grade of C.

RSMS:3141 Vascular Sonography I Lab 1 s.h.
Laboratory-based learning and simulation experience involving basic vascular sonographic imaging and clinical history analysis; students perform non-imaging vascular physiologic tests and sonographic exams utilizing scanning simulation to develop skills in sonographic anatomy recognition, scan plane orientation, transducer manipulation, instrumentation, and exam protocols. Prerequisites: RSMS:3111 with a minimum grade of C. Corequisites: RSMS:3140.

RSMS:3150 Cardiac Physiology and Hemodynamics 3 s.h.
Analysis of cardiac physiology and hemodynamics related to sonography; correlation with Doppler application in cardiovascular imaging, ECG, auscultation, cardiac catheterization; advanced and developing imaging techniques.

RSMS:3205 Cardiac Sonography II 3 s.h.
Sonographic evaluation of advanced pathophysiology of human heart; sonographic appearance, imaging techniques, and exam modification. Prerequisites: RSMS:3100.

RSMS:3206 Cardiac Sonography II Lab 1 s.h.
Laboratory-based learning and simulation experience involving the application of advanced sonographic cardiac imaging and clinical history analysis. Prerequisites: RSMS:3101. Corequisites: RSMS:3205.

RSMS:3215 Diagnostic Medical Sonography Clinical Internship II 3 s.h.
Application of basic skills of sonographic imaging and physiologic vascular testing in the health care setting.

RSMS:3230 Sonography Principles, Physics, and Instrumentation 3 s.h.
Physical principles of sound waves, their applications to imaging of the human body, operation and physical characteristics of various ultrasound transducers, method by which the sound wave is converted into a visual image, instrumentation components and their functions, Doppler principles, image artifacts, advanced hemodynamics, and spectral Doppler waveform analysis. Prerequisites: RSMS:3110.

RSMS:3231 Sonography Principles, Physics, and Instrumentation Lab 1 s.h.
Laboratory-based learning and simulation experience in the application of sonographic imaging emphasizing physics principles, instrumentation, and quality assurance testing. Corequisites: RSMS:3230.

RSMS:3240 Abdominal Sonography II 3 s.h.
Pathology and pathophysiology of abdominal and superficial structures imaged sonographically; interventional sonographic procedures; post-procedure protocol; associated clinical and laboratory findings; imaging techniques, analysis of findings, and documentation of pathology. Prerequisites: RSMS:3120.

RSMS:3250 Obstetrical and Gynecological Sonography II 3 s.h.
Sonographically related pathological and abnormal congenital conditions of gynecology and obstetrics, infertility, assisted reproductive therapy, invasive procedures in obstetrics and gynecology, postpartum complications and maternal-fetal bonding; clinical findings, laboratory studies, and prognosis correlated with sonographic findings; appropriate image analysis and documentation of pathology. Prerequisites: RSMS:3130.

RSMS:3260 Breast Sonography 2 s.h.
Embryology, anatomy, physiology, and pathophysiology of the breast as it relates to sonographic imaging; proper sonographic imaging techniques, including appearance of normal anatomy, imaging protocol, proper instrument settings; sonographic findings of diseases involving the breast.

RSMS:3270 Vascular Sonography II 3 s.h.
Pathology and pathophysiology of complex diseases of the peripheral, cerebral, and abdominal vascular systems evaluated sonographically; associated clinical findings; techniques in physiologic, nonimaging tests, and duplex sonography; analysis of findings and documentation of pathology. Prerequisites: RSMS:3140.

RSMS:3300 Pediatric Sonography 3 s.h.
Anatomy, sonographic anatomy, pathophysiology, sonographic appearance, and Doppler correlation of disorders affecting the pediatric population, including abdominal, musculoskeletal, peripheral vascular, and cerebrovascular systems, neonatal brain and spinal cord.

RSMS:3305 Pediatric Cardiac Sonography 3 s.h.
Anatomy, sonographic anatomy, pathophysiology, sonographic appearance, and Doppler correlation of disorders affecting the pediatric cardiac population; associated clinical findings; techniques in sonographic imaging, analysis of findings, and documentation of pathology. Requirements: completion of or current enrollment in a diagnostic medical sonography program.

RSMS:3306 Pediatric Cardiac Sonography Laboratory 1 s.h.
Laboratory-based learning and simulation experience involving basic sonographic pediatric cardiac imaging and clinical history analysis; students perform sonographic exams utilizing scanning simulation to develop skills in sonographic anatomy recognition, scan plane orientation, transducer manipulation, instrumentation, and exam protocols. Corequisites: RSMS:3305. Recommendations: completion of or current enrollment in a diagnostic medical sonography program.

RSMS:3315 Diagnostic Medical Sonography Clinical Internship III 4 s.h.
Application of sonographic imaging and physiologic vascular testing skills in health care setting; students develop competency in basic exams.

RSMS:3325 Abdominal Sonography II Lab 1 s.h.
Laboratory-based learning and simulation utilizing computer-aided learning and scanning simulation to develop skills in interventional sonographic procedures with real-time ultrasound guidance; advanced abdominal and superficial structure imaging; exploring case studies; image analysis in identifying pathologies and differential diagnoses. Prerequisites: RSMS:3121.

RSMS:3376 Vascular Sonography II Lab 1 s.h.
Laboratory-based learning and simulation experience to develop skills in advanced sonographic imaging of the vascular system and performance of advanced nonimaging vascular physiologic tests; analysis of findings and documentation of pathology. Prerequisites: RSMS:3141.

RSMS:4110 Advanced Sonography 3 s.h.
Exploration of advanced sonographic imaging techniques and new technologies. Prerequisites: (RSMS:3240 with a minimum grade of C and RSMS:3250 with a minimum grade of C and RSMS:3270 with a minimum grade of C) or (RSMS:3205 with a minimum grade of C and RSMS:3270 with a minimum grade of C).

RSMS:4111 Advanced Sonography Lab 1 s.h.
Laboratory-based learning and simulated application of advanced sonographic imaging techniques and new technologies. Prerequisites: (RSMS:3325 with a minimum grade of C and RSMS:3376 with a minimum grade of C) or (RSMS:3206 with a minimum grade of C and RSMS:3376 with a minimum grade of C). Corequisites: RSMS:4110.

RSMS:4115 Diagnostic Medical Sonography Clinical Internship IV 5 s.h.
Application of sonographic imaging and physiologic vascular testing skills in the health care setting; students develop competency in high-level procedures. Prerequisites: RSMS:3315 with a minimum grade of C and RSMS:3376 with a minimum grade of C.

RSMS:4120 Advanced Cardiac Sonography 3 s.h.
Advanced cardiac sonographic imaging techniques, quantifications, and new technologies; analysis of applications and limitations of imaging techniques. Prerequisites: RSMS:3205 with a minimum grade of C and RSMS:3270 with a minimum grade of C.

RSMS:4121 Advanced Cardiac Sonography Lab 1 s.h.
Laboratory-based learning and simulated application of advanced cardiac sonographic imaging techniques, quantifications, and new technologies. Prerequisites: RSMS:3206 with a minimum grade of C. Corequisites: RSMS:4120.

RSMS:4215 Diagnostic Medical Sonography Clinical Internship V 5 s.h.
Application of sonographic imaging and physiologic vascular testing skills in health care setting; students develop advanced skills. Prerequisites: RSMS:4115 with a minimum grade of C and RSMS:4110 with a minimum grade of C and RSMS:4111 with a minimum grade of C.

RSMS:4220 Multidisciplinary Capstone Seminar 3 s.h.
Case-based learning; students analyze and synthesize data, determine proper course of action, and evaluate outcomes; preparation for professional work environment. Prerequisites: RSMS:4110.