

Radiation Sciences, BS

Diagnostic Medical Sonography

The diagnostic medical sonography (DMS) program has two professional track options: general (RDMS) and vascular (RVT) sonography, or cardiac (RDCS) and vascular (RVT) sonography. Both tracks of the program are three years in length and have a selective and competitive admissions process. Students must satisfy all University of Iowa admission requirements, complete all prerequisites, and be accepted into the diagnostic medical sonography professional program following an application and selection process.

See Diagnostic Medical Sonography on the Radiation Sciences Program website.

Diagnostic Medical Sonography and Cardiac and Vascular Sonography

The diagnostic medical sonography program in cardiac and vascular sonography provides a multispecialty education in adult cardiac (echocardiography) and vascular sonography. Elective coursework in pediatric cardiac and fetal cardiac sonography are available.

The curriculum includes coursework in human pathology, patient care, medical ethics, quality assurance, equipment principles and instrumentation, sonographic anatomy and pathology, and hands-on clinical education in sonography.

Students in the cardiac and vascular track have the opportunity to learn and apply the skills to become proficient in adult echocardiography, vascular exams, invasive procedures, emergency exams, and 3D imaging.

Upon completing the program, graduates are eligible to apply for the national certification exams in diagnostic medical sonography in the specialty areas of cardiac (echocardiography) and vascular technology.

Students who will have completed all prerequisite courses by June 1 (except physics, which may be completed in the summer session) are eligible to apply to this three-year program. Students typically apply during their first year and begin in fall of their second year. Application deadline is Jan. 15. Up to eight students are accepted into this track each year, which begins in the fall.

DMS and Cardiac and Vascular Sonography, Required Courses

Upon acceptance into the diagnostic medical sonography and cardiac and vascular professional program, students will complete the following required courses and internships during their second, third, and fourth years.

| Course # | Title | Hours |
|---------------|----------------------------------------|-------|
| All of these: | | |
| RSCI:4110 | Vascular Anatomy | 3 |
| RSCI:4130 | Electrocardiogram and Hemodynamics | 3 |
| RSCT:4100 | Sectional Anatomy for Imaging Sciences | 3 |

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| RSMS:3100 | Cardiac Sonography I | 3 |
| RSMS:3101 | Cardiac Sonography I Lab | 2 |
| RSMS:3110 | Foundations of Sonography | 3 |
| RSMS:3111 | Foundations of Sonography Lab | 1 |
| RSMS:3115 | Diagnostic Medical Sonography Clinical Internship I | 1 |
| RSMS:3140 | Vascular Sonography I | 3 |
| RSMS:3141 | Vascular Sonography I Lab | 1 |
| RSMS:3150 | Cardiac Physiology and Hemodynamics | 3 |
| RSMS:3205 | Cardiac Sonography II | 3 |
| RSMS:3206 | Cardiac Sonography II Lab | 1 |
| RSMS:3215 | Diagnostic Medical Sonography Clinical Internship II | 3 |
| RSMS:3230 | Sonography Principles, Physics, and Instrumentation | 4 |
| RSMS:3231 | Sonography Principles, Physics, and Instrumentation Lab | 1 |
| RSMS:3270 | Vascular Sonography II | 3 |
| RSMS:3305 | Pediatric Cardiac Sonography | 3 |
| RSMS:3306 | Pediatric Cardiac Sonography Laboratory | 1 |
| RSMS:3315 | Diagnostic Medical Sonography Clinical Internship III | 3 |
| RSMS:3376 | Vascular Sonography II Lab | 1 |
| RSMS:4110 | Advanced Sonography | 3 |
| RSMS:4111 | Advanced Sonography Lab | 1 |
| RSMS:4115 | Diagnostic Medical Sonography Clinical Internship IV | 5 |
| RSMS:4120 | Advanced Cardiac Sonography | 3 |
| RSMS:4121 | Advanced Cardiac Sonography Lab | 1 |
| RSMS:4215 | Diagnostic Medical Sonography Clinical Internship V | 5 |
| RSMS:4220 | Multidisciplinary Capstone Seminar | 3 |
| RSP:2110 | Pathology for Radiation Sciences | 2 |
| RSP:2120 | Patient Care for the Radiation Sciences | 3 |
| RSP:3210 | Medical Ethics and Law | 2 |
| RSP:3220 | Radiation Sciences Quality Management and Health Care Administration | 2 |
| RSP:4110 | Research Methodology for Radiation Sciences | 3 |
| RSRT:3220 | Emotional Intelligence for the Health Care Professional | 2 |
| Elective | | |
| RSMS:4210 | Fetal Cardiac Sonography | 3 |

Diagnostic Medical Sonography and General and Vascular Sonography

The diagnostic medical sonography program in general and vascular sonography provides a multispecialty education in obstetrical, abdominal, pediatric, and vascular sonography. Elective coursework in breast and fetal cardiac sonography are available.

The curriculum includes coursework in human pathology, patient care, medical ethics, quality assurance, equipment principles and instrumentation, sonographic anatomy and pathology, and hands-on clinical education in sonography.

Students in the general and vascular track become proficient in routine imaging, high risk obstetrics and gynecology, pediatric and neonatal exams, vascular, transplant, invasive procedures, 3D imaging and other specialized imaging.

Upon completing the program, graduates are eligible to apply for the national sonography certification exams in abdomen, obstetrics and gynecology, and vascular.

Students who will have completed all prerequisite courses by June 1 (except physics, which may be completed in the summer session) are eligible to apply to this three-year program. Students typically apply to during their first year and begin in fall of their second year. Application deadline is Jan. 15. Up to 12 students are accepted into this track each year, which begins in the fall.

DMS and General and Vascular Sonography, Required Courses

Upon acceptance into the diagnostic medical sonography and general and vascular professional program, students will complete the following required courses and internships during their second, third, and fourth years.

| Course # | Title | Hours |
|---------------|------------------------------------------------------|-------|
| All of these: | | |
| RSCI:4110 | Vascular Anatomy | 3 |
| RSCI:4130 | Electrocardiogram and Hemodynamics | 3 |
| RSCT:4100 | Sectional Anatomy for Imaging Sciences | 3 |
| RSMS:3110 | Foundations of Sonography | 3 |
| RSMS:3111 | Foundations of Sonography Lab | 1 |
| RSMS:3115 | Diagnostic Medical Sonography Clinical Internship I | 1 |
| RSMS:3120 | Abdominal Sonography I | 3 |
| RSMS:3121 | Abdominal Sonography I Lab | 1 |
| RSMS:3130 | Obstetrical and Gynecological Sonography I | 3 |
| RSMS:3131 | Obstetrical and Gynecological Sonography I Lab | 1 |
| RSMS:3140 | Vascular Sonography I | 3 |
| RSMS:3141 | Vascular Sonography I Lab | 1 |
| RSMS:3215 | Diagnostic Medical Sonography Clinical Internship II | 3 |

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| RSMS:3230 | Sonography Principles, Physics, and Instrumentation | 4 |
| RSMS:3231 | Sonography Principles, Physics, and Instrumentation Lab | 1 |
| RSMS:3240 | Abdominal Sonography II | 3 |
| RSMS:3250 | Obstetrical and Gynecological Sonography II | 3 |
| RSMS:3270 | Vascular Sonography II | 3 |
| RSMS:3300 | Pediatric Sonography | 3 |
| RSMS:3315 | Diagnostic Medical Sonography Clinical Internship III | 3 |
| RSMS:3325 | Abdominal Sonography II Lab | 1 |
| RSMS:3376 | Vascular Sonography II Lab | 1 |
| RSMS:4110 | Advanced Sonography | 3 |
| RSMS:4111 | Advanced Sonography Lab | 1 |
| RSMS:4115 | Diagnostic Medical Sonography Clinical Internship IV | 5 |
| RSMS:4215 | Diagnostic Medical Sonography Clinical Internship V | 5 |
| RSMS:4220 | Multidisciplinary Capstone Seminar | 3 |
| RSP:2110 | Pathology for Radiation Sciences | 2 |
| RSP:2120 | Patient Care for the Radiation Sciences | 3 |
| RSP:3210 | Medical Ethics and Law | 2 |
| RSP:3220 | Radiation Sciences Quality Management and Health Care Administration | 2 |
| RSP:4110 | Research Methodology for Radiation Sciences | 3 |
| RSRT:3220 | Emotional Intelligence for the Health Care Professional | 2 |
| Electives | | |
| RSMS:3260 | Breast Sonography | 2 |
| RSMS:4210 | Fetal Cardiac Sonography | 3 |

DMS Recommended Pre-Major Work

The following courses are recommended prior to DMS program application.

| Course # | Title | Hours |
|---------------|----------------------------------------------|-------|
| All of these: | | |
| RSP:1100 | Introduction to the Radiation Sciences | 1 |
| PSY:1010 | Your Brain Unlocked: Learning About Learning | 1 |
| STAT:1020 | Elementary Statistics and Inference | 3 |
| One of these: | | |
| BIOL:1140 | Human Biology: Nonmajors | 4 |
| HHP:1400 | Human Anatomy and Physiology | 3 |

One of these:

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| BAIS:1500 | Business Technology and Artificial Intelligence | 2 |
| CS:1020 | Principles of Computing | 3 |