

# Magnetic Resonance Imaging Program Courses (Radiation Sciences) (RSMR)

## RSMR Courses

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

### **RSMR:4110 Fundamentals for the MRI Technologist**

**3 s.h.**

Caregiving skills specific to patients undergoing MRI examinations, including techniques in effectively communicating for safety and comfort; maintaining patient and personnel safety; patient preparation, monitoring, and venipuncture; technologist's role in a wide variety of MRI examinations and patient conditions. Requirements: acceptance to BS radiation sciences RT/MRI track or ARRT primary certification in radiologic technology, nuclear medicine, sonography, or radiation therapy.

### **RSMR:4120 MRI Procedures I**

**4 s.h.**

Imaging techniques related to central nervous and musculoskeletal systems; specific clinical applications; available coils and their use; considerations in imaging parameters; specific choices in protocols and positioning criteria; anatomical structures and the plane that best demonstrates anatomy; signal characteristics of normal and abnormal structures; information on common pathological conditions found in MRI images and protocol appearance variations. Prerequisites: RSCT:4100 and RSMR:4110. Requirements: concurrent registration in RSMR:4110, if not taken as a prerequisite; or three months MRI experience.

### **RSMR:4130 MRI Procedures II**

**4 s.h.**

MRI techniques related to neck, thorax, breast, abdomen, and pelvis; specific clinical applications; available coils and their use; considerations in imaging parameters; specific choices in protocols and positioning criteria; information on common pathological conditions found in MRI images and protocol appearance variations. Prerequisites: RSMR:4120.

### **RSMR:4140 MRI Acquisition and Principles I**

**3 s.h.**

Physics and hardware used in obtaining a magnetic resonance signal, including magnetism, NMR signal production, tissue characteristics, spatial localization, pulse sequencing, imaging parameters and options, and special applications; exploration of skills useful in maximizing MR image quality. Prerequisites: RSMR:4110. Requirements: concurrent registration in RSMR:4110, if not taken as a prerequisite; or three months MRI experience.

### **RSMR:4150 MRI Acquisition and Principles II**

**3 s.h.**

Advanced MRI techniques; MR angiography and further investigation of fast image acquisition sequences; overview of MR magnets, installation, operation, and facility design; computers and digital image acquisition as they apply to MR; outline of quality assurance procedures. Prerequisites: RSMR:4140.

### **RSMR:4160 MRI Clinical Internship I**

**2 s.h.**

Application of magnetic resonance imaging skills in health care setting; development of competency in high-level procedures and protocols. Prerequisites: RSMR:4110 and RSRT:3225. Corequisites: RSMR:4120 and RSMR:4140, if not taken as prerequisites. Requirements: acceptance to BS radiation sciences RT/MRI track.

### **RSMR:4170 MRI Clinical Internship II**

**4 s.h.**

MRI clinical internship scheduled at University of Iowa Hospitals & Clinics; rotation through each MRI department scanning room; competency and objective-based education with required clinical performance evaluations; clinical preceptor facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by MRI technologists, radiologists, residents, and preceptor; participation in routine and advanced MRI scans; performance expectations become progressively higher as student gains experience and skills. Prerequisites: RSMR:4160. Corequisites: RSMR:4140, if not taken as a prerequisite. Requirements: acceptance to BS radiation sciences RT/MRI track.

### **RSMR:4175 MRI Clinical Internship III**

**4 s.h.**

Rotation through MRI department scanning rooms at University of Iowa Hospitals & Clinics; competency and objective-based education with required clinical performance evaluations; clinical preceptor facilitates schedules, rotations, learning objectives, evaluations, and competencies; experience facilitated by MRI technologists, radiologists, residents, and preceptor; participation in routine and advanced MRI scans; performance expectations become progressively higher as students gain experience and skills. Prerequisites: RSMR:4170.