

MAGNETIC RESONANCE IMAGING (MRIC)

MRIC 2260 - Introduction to MRI (6 Credits)

This course provides students with a knowledge of MRI image production, including image acquisition and reconstruction. The selection of scan protocols will be related to anatomical region, patient history and physical condition. Attention is given to patient education, screening and care. Clinical application is part of this course. Anatomical regions of the head and neck, spine, thorax and abdomen are considered. Note: Students must be a Registered Radiographer to enroll in this course.

Lecture: 3 hours, Other: 16 hours

MRIC 2270 - MRI Physics and Instrumentation (3 Credits)

This course provides students with a basic understanding of the physics of magnetic resonance imaging and the instrumentation used to acquire MRI images. The basic principles of electricity and magnetism are addressed, as well as the characteristics of radio frequencies and the phenomenon of resonance. Application of these principles to data acquisition is discussed. Hazards associated with strong magnetic fields and radio frequencies is addressed, as well as the actual components of magnetic resonance equipment. Note: Student must be Registered radiographer to register for this course.

Lecture: 3 hours

MRIC 2280 - Procedures and Methods for MRI Imaging (6 Credits)

This course addresses advanced imaging techniques, including MR angiography, cardiac imaging and spectroscopy. The nature and use of contrast agents is discussed. Factors related to image quality, artifacts and quality assurance is considered. Imaging of the pelvis, musculoskeletal and vascular system are discussed. Supervised clinical practice is included. Note: Course meets for 3 lecture hours and 16 clinical hours a week.

Lecture: 3 hours, Other: 16 hours

Prerequisite(s): MRIC 2270 and MRIC 2290 (may be taken concurrently)

MRIC 2290 - MRI Safety and Quality Assurance (3 Credits)

This course addresses safety practices and quality assurance as they relate to magnetic resonance imaging. Factors related to image quality and optimal operation of imaging equipment are considered. Students evaluate MRI images for quality and learn to manipulate parameters when necessary. MRI screening procedures and safety considerations for all patients are addressed as well as special concerns for patients with biomedical implants and devices. Students apply knowledge from classroom instruction and activities as part of a supervised clinical experience.

Lecture: 3 hours

Prerequisite(s): MRIC 2280 (may be taken concurrently)