

Master Syllabus

RAT 2643 - Principles of Magnetic Resonance Imaging

Division: Health Sciences

Department: Radiologic Technology

Credit Hour Total: 2.0

Lecture Hrs: 2.0

Other Prerequisite(s): Approval of Department

Date Revised: February 2014

Course Description:

Basic physics concepts involving the generation and construction of human planar images using magnetic resonance imaging technology.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency

Course Outcomes:

Magnetic resonance imaging equipment components

Describe basic components comprising a magnetic resonance imaging scanner.

Assessment Method: Locally developed exams

Performance Criteria: 71% or higher achieved

Magnetism, atomic structure, and radio frequency

Describe major principles of magnetism, atomic structure and radio frequency.

Assessment Method: Locally developed exams

Performance Criteria: 71 % or higher achieved

Acquiring sectional images

Describe how principles of magnetism and atomic structure are used in sectional image acquisition.

Assessment Method: Locally developed exams

Performance Criteria: 71% or higher achieved

Magnetic resonance parameters

Identify and describe the use of magnetic resonance parameters in sectional image acquisition.

Assessment Method: Locally developed exams

Performance Criteria: 71% or higher achieved

Outline:

Electricity and magnetism
Nuclear magnetic signals
MRI parameters
Pulse sequencing in image acquisition
Signal to noise ratio
Hardware