Virginia Western Community College
RAD 251
Enhanced Patient Care for MRI

Prerequisites:
RT, CNMT, ARRT Registered or Registry Eligible

Course Description:
Introduces the student to their role as collaborator in patient care by providing the critical thinking skills necessary to implement appropriate examination protocols and patient care essential for obtaining diagnostic images. Cases can be performed via MRI simulation or from actual MRI examinations.

Semester Credits: 3 **Lecture Hours: 3** **Lab/Clinical/Internship Hours: 0**

Required Materials
Course materials will be case studies upload into the Learning management system

Other Required Materials:
Internet Access

Course Outcomes
At the completion of this course, the student should be able to:

- Discuss the clinical indications for MRI examinations.
- Discuss relevant patient preparation and care necessary to obtain diagnostic images for the exam
- Obtain clinical information relative to the examination ordered.
- Correlate clinical with reported results
- Identify general anatomy demonstrated on the examination
- Identify abnormalities demonstrated on the scans
- Discuss any disease process(es) depicted on the scan(s)
- Give a general prognosis for the disease processes identified or assigned
- Discuss any adjustments in scanning protocols necessary to obtain diagnostic images

Topical Description

UNIT 1: Pulse Seguences and Artifacts

Westbrook - MRI in Practice Chapter 7

Westbrook- MRI in Practice Chapters 6 & 8

Flow Phenomena, Artifacts and their compensation, Vascular and Cardiac Imaging

UNIT 2: MRI Bioeffects

PowerPoint - MRI Bioeffects {Ch. 1, 2, 3, 4)

PowerPoint- MRI Bioeffects {Ch. 5, 6, 9}

Basic MRI Physics, implications for MRI Safety, Bioeffects of Static Magnetic Fields, Gradient Magnetic Fields, Acoustic Noise and MRI Procedures

UNIT 3: MRI Contrast Agent Safety

ACR Manual on Contrast Media

PowerPoint - MRI Bioeffects {Ch. 10 & 11} Westbrook; "MRI in Practice Chapter 11

Identification and Management of acute reactions to Gadolinium-Based Contrast Agents, MRI Contrast agents and Nephrogenic Systemic Fibrosis

UNIT 4: MRI of Critical, Pediatric, Sedation

PowerPoint- MRI Bioeffects {Ch. 14)

PowerPoint- MRI Bioeffects {Ch. 15)

Patient Monitoring in the MRI environment, Performing sedation and anesthesia during MRI