

Washtenaw Community College Comprehensive Report

MRI 135 MRI Quality Assurance Effective Term: Fall 2015

Course Cover

Division: Math, Science and Health

Department: Allied Health

Discipline: Magnetic Resonance Imaging

Course Number: 135

Org Number: 15600

Full Course Title: MRI Quality Assurance

Transcript Title: MRI Quality Assurance

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission: New Course

Change Information:

Rationale: This course is required for the Magnetic Resonance Imaging (MRI) program curriculum.

Proposed Start Semester: Winter 2016

Course Description: In this course, students receive a comprehensive overview of the Magnetic Resonance Imaging (MRI) quality assurance program. Topics include the qualifications of personnel, the quality control program, safety policies and image quality specific to MRI.

Course Credit Hours

Variable hours: No

Credits: 1

Lecture Hours: Instructor: 15 **Student:** 15

Lab: Instructor: 0 **Student:** 0

Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 15 **Student:** 15

Repeatable for Credit: NO

Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Enrollment Restrictions

Admission to the Magnetic Resonance Imaging (MRI) program.

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Define the roles of the medical director, medical physicist, and technologist in the Magnetic Resonance Imaging (MRI) quality assurance program.

Assessment 1

Assessment Tool: Departmental final exam

Assessment Date: Winter 2019

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: answer key

Standard of success to be used for this assessment: 80% of the students will score 70% or higher on the outcome related questions.

Who will score and analyze the data: Departmental Faculty

2. Identify the concepts of quality control testing and the annual system performance evaluation of Magnetic Resonance Imaging (MRI) equipment.

Assessment 1

Assessment Tool: Departmental final exam

Assessment Date: Winter 2019

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

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How the assessment will be scored: answer key

Standard of success to be used for this assessment: 80% of the students will score 70% or higher on the outcome related questions.

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Course Objectives

1. Discuss the purpose and benefits of Magnetic Resonance Imaging (MRI) accreditation.

Matched Outcomes

2. Describe the process leading to the American College of Radiology (ACR) Magnetic Resonance Imaging (MRI) accreditation.

Matched Outcomes

3. Discuss what it means for a magnetic resonance imaging facility to be accredited by the American College of Radiology (ACR).

Matched Outcomes

4. Identify the time limit for the American College of Radiology (ACR) Magnetic Resonance Imaging (MRI) accreditation.

Matched Outcomes

5. Identify the key elements of an effective Magnetic Resonance Imaging (MRI) quality assurance (QA) program.

Matched Outcomes

6. Outline the Magnetic Resonance Imaging (MRI) quality assurance program recommended by the American College of Radiology (ACR).

Matched Outcomes

7. List the credentials necessary for physicists, physicians and technologist for the American College of Radiology (ACR) Magnetic Resonance Imaging (MRI) accreditation.

Matched Outcomes

8. Discuss the responsibilities of technologists regarding the American College of Radiology (ACR) Magnetic Resonance Imaging (MRI) accreditation process.

Matched Outcomes

9. Review the required quality control tests that are to be performed by the MRI technologists in accordance with the ACR MRI accreditation process.

Matched Outcomes

10. Identify the clinical images that must be submitted to the American College of Radiology (ACR) for the MRI accreditation process.

Matched Outcomes

11. List the normal range of values expected from the magnetic resonance (MR) phantom quality assurance test.

Matched Outcomes

12. List the steps required to prepare the magnetic resonance (MR) phantom for scanning and completing the weekly quality assurance scan.

Matched Outcomes

13. Determine high and low contrast values based on the quality assurance scan.

Matched Outcomes

14. Measure the geometry of the phantom from the quality assurance scan.

Matched Outcomes

15. Compare and contrast the most common artifacts found on magnetic resonance images.

Matched Outcomes

16. Evaluate the quality assurance magnetic image (MR) scan for image artifacts.

Matched Outcomes

17. Determine table positioning accuracy using the phantom scan.

Matched Outcomes

18. Describe the Magnetic Resonance Imaging (MRI) annual systems performance evaluation process.

Matched Outcomes

19. Discuss why quality control matters in the Magnetic Resonance Imaging (MRI) environment.

Matched Outcomes

20. Discuss the requirements for maintaining the American College of Radiology (ACR) Magnetic Resonance Imaging (MRI) accreditation.

Matched Outcomes

21. Discuss the ramification of failing to meet the Magnetic Resonance Imaging (MRI) accreditation standards.

Matched Outcomes

New Resources for Course

Course Textbooks/Resources

- Textbooks
- Manuals
- Periodicals
- Software

Equipment/Facilities

- Level III classroom
- Testing Center
- Other: OE 121 Radiography Lab will be used.

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Connie Foster</i>	<i>Faculty Preparer</i>	<i>Nov 18, 2014</i>
Department Chair/Area Director: <i>Connie Foster</i>	<i>Recommend Approval</i>	<i>Nov 18, 2014</i>
Dean: <i>Kristin Brandemuehl</i>	<i>Recommend Approval</i>	<i>Nov 19, 2014</i>
Vice President for Instruction: <i>Bill Abernethy</i>	<i>Approve</i>	<i>Jan 05, 2015</i>