

**Course Assessment Report**  
**Washtenaw Community College**

Discipline	Course Number	Title
Magnetic Resonance Imaging	135	MRI 135 07/31/2019-MRI Quality Assurance
Division	Department	Faculty Preparer
Health Sciences	Allied Health	Catherine Blaesing
Date of Last Filed Assessment Report		

**I. Review previous assessment reports submitted for this course and provide the following information.**

1. Was this course previously assessed and if so, when?

No

2. Briefly describe the results of previous assessment report(s).

3.

4. Briefly describe the Action Plan/Intended Changes from the previous report(s), when and how changes were implemented.

5.

**II. Assessment Results per Student Learning Outcome**

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

- Assessment Plan
  - Assessment Tool: Departmental final exam
  - Assessment Date: Winter 2019
  - 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

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2019, 2018, 2017	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
21	20

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

One student voluntarily left the program due to family care issues. Multiple attempts to have this student withdraw from this course were unsuccessful. This student was informed that they may re-enroll in a subsequent year.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students who completed this course were included in the assessment.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

A multiple choice final exam was given with one point awarded for each correct answer. The final exam was weighted 25% of the overall final grade for this class.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: No

The standard of success states that 80% of the students will score 70% or higher on the outcome-related questions. To more accurately reflect students' overall understanding of the area, we used the standard of success: 80% of students will score correctly 70% of the outcome-related questions. Eight common outcome-related questions between 2017-2019 were used to assess this outcome.

80% of students scored correctly on 4/8 (50%) of questions, which does not meet the standard of success.

In the future, the standard of success will be updated to read, "70% of students will score 70% or higher on the final exam."

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

For this outcome, the averages per year were 92.9%, 64.3% and 98.6%. This performance report shows that 85% of students scored an average of 85.26% or better, well above the ARRT standard to pass, at 76%.

Based on the average final exam score, material was presented in a way that allowed for good understanding of the roles of the medical director, medical physicist and technologist in the quality assurance process.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

The plan for continuous improvement is to present this material with emphasis on the differing roles that each professional provides.

We will evaluate the questions from this outcome which had lower results, to investigate whether we should add instruction on these areas or revise the questions themselves.

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

- Assessment Plan
  - Assessment Tool: Departmental final exam
  - Assessment Date: Winter 2019
  - 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

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2018, 2017, 2019	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
21	20

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

One student voluntarily left the program due to family care issues. Multiple attempts to have this student withdraw from this course were unsuccessful. This student was informed that they may re-enroll in a subsequent year.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students who completed this course were included in the assessment.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

A multiple choice final exam was given with one point awarded for each correct answer. The final exam was weighted 25% of the overall final grade for this class.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: No

The standard of success states that 80% of the students will score 70% or higher on the outcome-related questions. To more accurately reflect students' overall understanding of the area, we used the standard of success: 80% of students will score correctly on 70% of the outcome-related questions. 11 common outcome-related questions from 2017 and 2019 were used to assess this outcome, and the nine outcome-related questions from 2018 were also used to assess this outcome.

For the common questions from 2017 and 2019, 80% of the students scored correctly on 10/11 (90.9%) questions correctly, meeting the standard of success.

For the questions from 2018, 80% of the students scored correctly on 4/9 (44.4%) questions, which does not meet the standard of success.

In the future, the standard of success will be updated to read, "70% of students will score 70% or higher on the final exam."

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

For this outcome the averages per year were 75%, 69.7% and 98.6%. This performance report shows that 85% of students scored an average of 81.1% or better, well above the ARRT standard to pass, at 76%.

Based on the average final exam score, material was presented in a way that allowed for good understanding of the concept of quality control testing.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Continuous improvement includes the purchase of an American College of Radiology (ACR) large quality assurance phantom and holder as well as software to assist in processing of data. A foundation grant was awarded to the program for the purchase of these items. This will allow for knowledgeable instructors to assist students and reinforce understanding of the process.

We will evaluate the questions from this outcome which had lower results, to investigate whether we should add instruction on these areas or revise the questions themselves.

### **III. Course Summary and Intended Changes Based on Assessment Results**

1. Based on the previous report's Intended Change(s) identified in Section I above, please discuss how effective the changes were in improving student learning.

There is no prior continuous improvement plan.

2. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

The course is meeting the needs of the students by achieving the quality assurance competencies needed to take the ARRT MRI registry exam.

3. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

All information from this report will be shared with department faculty who will be given an opportunity to comment on this report.

- 4.

Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	The assessment tool will be updated from "departmental final exam" to "final exam".	To ensure consistency in data collection for future assessment.	2020
Course Materials (e.g. textbooks, handouts, on-line ancillaries)	Present material with emphasis on the differing roles each professional provides related to Outcome 1.	Continuous improvement.	2020
Other: Equipment purchases	A foundation grant was awarded to the program to purchase an ACR large quality assurance phantom and holder as well as the software to assist in processing data.	Continuous improvement; allowing knowledgeable instructors to assist students and reinforce their understanding of the process.	2020
Other: Standard of success	Standard of success to be used for this assessment: 80% of the students will score 70% or higher on each related outcome question should be changed to read "70% of students will score 70% or higher on the final exam".	The standard of success should reflect students' performance on the topics, not the class performance on each individual question. It is important for these tools and standards of success to reflect ARRT standards and rankings.	2020

5. Is there anything that you would like to mention that was not already captured?

6.

### III. Attached Files

[MRI 135 2018 Course Performance](#)

[MRI 135 2017 Course Performance](#)

[ARRT Exam Results](#)

[MRI 135 2019 Course Performance](#)

[MRI 135 2017, 2019 Outcome 2](#)

[MRI 135 2017 Outcome 1](#)

[MRI 135 2018 Outcome 1](#)

[MRI 135 2019 Outcome 1](#)

[MRI 135 2018 Outcome 2](#)

[MRI 135 2017-2019 Assessment Data](#)

**Faculty/Preparer:** Catherine Blaesing **Date:** 08/22/2019

**Department Chair:** Kristina Sprague **Date:** 08/22/2019

**Dean:** Valerie Greaves **Date:** 08/23/2019

**Assessment Committee Chair:** Shawn Deron **Date:** 03/02/2020