

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

Discipline	Course Number	Title
Radiography	190	RAD 190 04/05/2016-Physical Foundations of Radiography
Division	Department	Faculty Preparer
Health Sciences	Allied Health	William Nelson
Date of Last Filed Assessment Report		

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

Outcome 1: Apply the concepts and principles of radiographic physics, equipment operation and x-ray production.

- Assessment Plan
  - Assessment Tool: The Equipment Operation & Quality Control section of the American Registry of Radiologic Technologists
  - Assessment Date: Spring/Summer 2014
  - Course section(s)/other population: All course sections/All students
  - Number students to be assessed: All enrolled students
  - How the assessment will be scored: The "Equipment Operation and Quality Control" section of the American Registry of Radiologic Technologists (ARRT) national certification examination is a standardized multiple choice exam. Section scores are reported on a scale that ranges from 0.1 to 9.9 and are reported in one-tenth point intervals.
  - Standard of success to be used for this assessment: 90% of the graduates will obtain a scaled score equal to or greater than the national average on the "Equipment Operation and Quality Control" section of the ARRT national certification examination.
  - Who will score and analyze the data: American Registry of Radiologic Technologists (ARRT)

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)
2015, 2014	2013	

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

# of students enrolled	# of students assessed
71	67

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.

Students that completed the program in the spring of 2013, 2014, and 2015 were used for this assessment process.

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.

Students that completed the program in the spring of 2013, 2014, and 2015 were used for this assessment process.

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

The outcome was assessed by using the national comparison report provided by the ARRT.

The American Registry of Radiologic Technologists (ARRT) national certification examination is a standardized multiple-choice exam. Section scores are reported on a scale that ranges from 0.1 to 9.9 and are reported in one-tenth point intervals. Statistical data for this outcome (*Equipment Operation and Quality Control*) is under Section B in the National Comparison Report (attached).

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: Yes

For the class of 2013, their scaled score was 8.8; the national average was 8.2

For the class of 2014, their scaled score was 8.4; the national average was 8.1

For the class of 2015, their scaled score was 8.5; the national average was 8.0

All classes for 2013 to 2015 exceeded the national average which indicates that the standard was met.

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

To prepare for the ARRT national exam, our students take a variety of classes in the area of imaging physics, radiation biology, radiographic positioning, patient care, equipment operations, pathology, and quality control. The section of the exam (Equipment Operations and Quality Control) selected for the assessment process is technologically complex and can be academically challenging. I'm encouraged by the results from this assessment because it lets me know our instructional methods are effective.

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.

Imaging technology is consistently changing. Students must be prepared for these changes when entering the clinical setting as entry level radiographers.

My goal is to continually update course content in the area of imaging physics and equipment operations by utilizing available media and the expertise of biomedical engineers.

## II. Course Summary and Action Plans Based on Assessment Results

1. 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 contents of this course prepares radiography students to work with imaging equipment and take the ARRT national exam.

The results of the assessment were encouraging.

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

National examination results are reported during the fall departmental meeting. The results from this report will be shared at that time.

- 3.

Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
No changes intended.			

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

5.

### III. Attached Files

[ARRT National Comparison Report](#)

**Faculty/Preparer:** William Nelson **Date:** 07/01/2016

**Department Chair:** Connie Foster **Date:** 07/05/2016

**Dean:** Valerie Greaves **Date:** 07/12/2016

**Assessment Committee Chair:** Michelle Garey **Date:** 10/03/2016

**COURSE ASSESSMENT REPORT**

**I. Background Information**

1. Course assessed:  
 Course Discipline Code and Number: RAD 190  
 Course Title: Physical Foundations of Radiography  
 Division/Department Codes: MSH
  
2. Semester assessment was conducted (check one):  
 Fall 20\_\_  
 Winter 2011  
 Spring/Summer
  
3. Assessment tool(s) used: check all that apply.  
 Portfolio  
 Standardized test  
 Other external certification/licensure exam (specify):  
 The American Registry of Radiologic Technologists (ARRT)  
 Survey  
 Prompt  
 Departmental exam  
 Capstone experience (specify):  
 Other (specify):
  
4. Have these tools been used before?  
 Yes  
 No

If yes, have the tools been altered since its last administration? If so, briefly describe changes made.  
 The ARRT updates the Radiography Certification Exam each year to include current technology and advances in the field.

5. Indicate the number of students assessed and the total number of students enrolled in the course.  
 All 2011 graduates were assessed: 27 students
  
6. If all students were not assessed, describe how students were selected for the assessment. *(Include your sampling method and rationale.)*  
 All 27 of the 2011 graduates were assessed.

**II. Results**

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.  
 Minor changes to lecture material and homework assignments.  
 (Note: per Joy Garrett previous outcomes do not exist)
  
2. List each outcome that was assessed for this report exactly as it is stated on the course master syllabus. *(You can copy and paste these from CurricUNET's WR report.)*  
 Apply the concepts and principles of radiographic physics, equipment operation, and x-ray production.
  
3. For each outcome that was assessed, indicate the standard of success exactly as it is stated on the course master syllabus. *(You can copy and paste these from CurricUNET's WR report.)*

The standard of success for each of the outcomes listed in question 2 above is: 90% of the graduates will obtain a scaled score equal to or greater than national average on the "Equipment Operation and Quality Control" section of the ARRT national radiography certification examination.

**COURSE ASSESSMENT REPORT**

4. Briefly describe assessment results based on data collected during the course assessment. Indicate the extent to which students are achieving each of the learning outcomes listed above and state whether the standard of success was met for each outcome. *In a separate document, include a summary of the data collected and any rubrics or scoring guides used for the assessment.*

The 27 WCC 2011 graduates scored 8.4, which was above the national average on section B “Equipment Operation & Quality Control” on the national ARRT radiography certification exam. The national average on section B was 8.2. See attached ARRT National Comparison Report and the ARRT Annual Program Summary Report.

(Note: Per Joy Garrett: This standardized exam does not provide data on individual questions on the ARRT radiography certification exam.)

5. Describe the areas of strength and weakness in students’ achievement of the learning outcomes shown in the assessment results. *(This should be an interpretation of the assessment results described above and a thoughtful analysis of student performance.)*

Strengths: The WCC 2011 graduates from the Radiography Program demonstrated a basic knowledge of radiographic physics, equipment operation, and x-ray production.

Weaknesses: No weakness was identified.

**III. Changes influenced by assessment results**

1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be taken to address these weaknesses. *(If students met all expectations, describe your plan for continuous improvement.)*

No major changes will be made to RAD 190, Physical Foundations of Radiography

2. Identify intended changes that will be instituted based on results of this assessment activity (check all that apply). Please describe changes and give rationale for change.

a.  Outcomes/Assessments on the Master Syllabus  
Change/rationale:

b.  Objectives/Evaluation on the Master Syllabus  
Change/rationale:

c.  Course pre-requisites on the Master Syllabus  
Change/rationale:

d.  1<sup>st</sup> Day Handouts  
Change/rationale:

e.  Course assignments  
Change/rationale:.

f.  Course materials (check all that apply)  
 Textbook Textbook adoptions are reviewed each year.  
 Handouts Handouts are updated each year  
 Other:

g.  Instructional methods  
Change/rationale:

h.  Individual lessons & activities  
Change/rationale:

3. What is the timeline for implementing these actions? Revision will be included in the next course offering.

COURSE ASSESSMENT REPORT

The textbooks and course materials for RAD 190 are reviewed each year and updated as need to keep the curriculum current in regards to new advancements in the field.

IV. Future plans

- 1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.

Using the ARRT radiography certification examination results, which compares the performance of the WCC graduations to students from other radiography programs across the country, is an effective tool in measuring the effectiveness of the radiography curriculum.

- 2. If the assessment tools were not effective, describe the changes that will be made for future assessments.

- 3. Which outcomes from the master syllabus have been addressed in this report?

All X Selected \_\_\_\_\_

If "All", provide the report date for the next full review: Spring 2014.

If "Selected", provide the report date for remaining outcomes: \_\_\_\_\_.

Submitted by:

Print: Connie FOSTER Signature Connie Foster Date: 5/3/12  
Faculty/Preparer

Print: Connie FOSTER Signature Connie Foster Date: 5/3/12  
Department Chair

Print: M. Showalter Signature M. Showalter Date: 5/9/12  
Dean/Administrator