

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

Discipline	Course Number	Title
Radiography	100	RAD 100 07/09/2016- Introduction to Diagnostic Imaging
Division	Department	Faculty Preparer
Health Sciences	Allied Health	Connie Foster
Date of Last Filed Assessment Report		

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

Outcome 1: Recognize the historical events that lead to the development of diagnostic medical imaging.

- Assessment Plan
  - Assessment Tool: Departmental RAD unit and final exams
  - Assessment Date: Fall 2011
  - Course section(s)/other population: all
  - Number students to be assessed: ~60
  - How the assessment will be scored: Itemized analysis of departmental unit and final exam questions. Exam question with less than 70% correct will be reviewed.
  - Standard of success to be used for this assessment: Students will score 70% or above on exam questions.
  - Who will score and analyze the data: A Radiography Program faculty member.

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		

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

# of students enrolled	# of students assessed
52	42

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.

Ten students withdrew from the course.

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 attending class.

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

The tool used to assess this outcome was a 50 question multiple-choice exam administered in the WCC Testing Center using Blackboard. Total scores on the multiple-choice final examination were based on raw scores (e.g., correct answers received 1 point and incorrect and unanswered questions received zero points). Students were permitted to attempt the exam one time.

An itemized analysis was completed on exam questions concerning the historical events relating to the field of radiology. Questions in which the students scored less than 70% were reviewed. 80% of the students will score 70% or above on the exam.

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

42 students took the exam, the highest score was 94% and the lowest score was 56%. 21% (9) of the students scored between 90 – 100%; 52% (22) of the students scored between 80 - 89%; 17% (7) of them scored between 70 - 79%; 7% (3) of the students scored between 60 - 69%; 2% (1) student scored between 50 - 59%.

80% of the students will score 70% or above on the exam.

90% (38) of the students scored 70% or above on the exam.

Students scored less than 70% on the following 5 exam questions concerning historical events in diagnostic imaging.

Questions	Answers (* correct answer)			
	A	B	C	D
8	5%	12%	62%*	21%
43	19%	2%	62%*	17%
45	55%*	10%	4%	31%
47	38%	57%*	0%	5%
49	5%	57%*	21%	17%

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

Student understand the historical events that lead to the development of diagnostic medical imaging.

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 homework and examination questions on this unit will be updated.

Outcome 2: Identify the different medical imaging modalities, their equipment, practice standards and the principles of image production.

- Assessment Plan
  - Assessment Tool: Departmental RAD unit and final exams
  - Assessment Date: Fall 2011
  - Course section(s)/other population: all
  - Number students to be assessed: ~60
  - How the assessment will be scored: Itemized analysis of departmental unit and final exam questions. Exam question with less than 70% correct will be reviewed.
  - Standard of success to be used for this assessment: Students will score 70% or above on exam questions.
  - Who will score and analyze the data: A Radiography Program faculty member.

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		

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

# of students enrolled	# of students assessed
52	42

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.

There were 10 withdrawals in RAD 100.

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 attending class were included.

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

The tool used to assess this outcome was a 50 question multiple-choice exam administered in the WCC Testing Center using Blackboard. Total scores on the multiple-choice final examination were based on raw scores (e.g., correct answers received 1 point, incorrect and unanswered questions received zero points). Students were permitted to attempt the exam one time.

An item analysis was done on questions regarding imaging modalities and the principles of image production. Questions in which the students scored less than 70% were reviewed. 80% of the students will score 70% or above on the exam.

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

42 students took the exam, the highest score was 96% and the lowest score was 48%. 7% (3) of the students scored between 90 – 100%; 43% (18) of the students scored between 80 - 89%; 29% (12) of them scored between 70 - 79%; 12% (5) of the students scored between 60 - 69%; 7% (3) of the student scored between 50 - 59%; 2% (1) student scored between 40 - 49%

80% of the students will score 70% or above on the exam.

79% (33) of the students scored 70% or above on the exam.

Students scored less than 70% on the following 9 exam questions.

Questions	Answers (* correct answer)			
6	62%*	19%	12%	7%
7	36%	17%	40%*	7%
13	7%	31%	10%*	52%
26	24%	12%	2%	62%*
30	19%	12%	48%*	21%
33	41%	41%*	14%	4%
35	29%	43%*	14%	14%
38	0%	64%*	12%	24%
48	69%*	31%*	0%	0%

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

Although this learning outcome was not met, the majority of the students were successful on this unit exam. 79% (33) of the students scored 70% or above on this exam.

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.

Student achievement of this learning outcome could be improved by identifying and defining the technical factors used to produce a diagnostic image.

Outcome 3: Identify the role of the radiologic technologist in the healthcare delivery system, their practice standards, educational requirements, professional organizations and career outlook.

- Assessment Plan
  - Assessment Tool: Departmental RAD unit and final exams
  - Assessment Date: Fall 2011
  - Course section(s)/other population: all
  - Number students to be assessed: ~60
  - How the assessment will be scored: Itemized analysis of departmental unit and final exam questions. Exam question with less than 70% correct will be reviewed.

- Standard of success to be used for this assessment: Students will score 70% or above on exam questions.
- Who will score and analyze the data: A Radiography Program faculty member.

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		

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

# of students enrolled	# of students assessed
52	42

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.

There were 10 withdrawals in RAD 100.

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 attending class were included.

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

The tool used to assess this outcome was a 40 question multiple-choice exam administered in the WCC Testing Center using Blackboard. Total scores on the multiple-choice final examination were based on raw scores (e.g., correct answers received 1 point, incorrect and unanswered questions received zero points). Students were permitted to attempt the exam one time.

An item analysis was done on questions regarding practice standards, educational requirements, and professional organizations with less than 70% correct. 80% of the students will score 70% or better on the unit exam.

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: <u>No</u>				
42 students took the exam, the highest score was 93% and the lowest score was 36%. 7% (3) of the students scored between 90 – 100%; 31% (13) of the students scored between 80 - 89%; 31% (13) of them scored between 70 - 79%; 14% (6) of the students scored between 60 - 69%, 7% (3) of the student scored between 50 - 59%; 7% (3) of the student scored between 40 - 49%; 2% (1) student scored between 30 - 39%.				
80% of the students will score 70% or above on the exam. 69% (29) of the students scored 70% or above on the exam.				
Students scored less than 70% on the following 7 exam questions.				
Questions	Answers (*correct answer)			
15	A	B	C	D
16	38%	5%	0%	57%*
19	3%	38%	14%	45%
22	0%	0%	50%*	50%
23	57%*	17%	12%	14%
24	31%	43%*	7%	19%
35	2%	2%	48%*	48%

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

Although this learning outcome was not met, the majority of the students were successful on this unit exam. 69% (29) of the students scored 70% or above on this exam.

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.

Student achievement of this learning outcome could be improved by outlining the educational requirements for radiologic technologist, and comparing and contrasting the professional organizations.

## 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?

This is a prerequisite course for students who plan to enter the Radiography program. Through this course, students gained a better understanding of how the

field of diagnostic imaging has evolved and the level of expertise that one needs to develop in order to become a radiologic technologist. After completing this course, students are better equipped to make an informed decision about pursuing a career in diagnostic imaging.

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

This assessment will be shared with the radiography faculty at a departmental meeting.

3. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Outcome Language	<p>The following changes will be instituted based on the results of the assessment process:</p> <ol style="list-style-type: none"> <li>1. Update the student learning outcomes.</li> <li>2. Change the assessment tool.</li> <li>3. Update the homework questions that cover the topics on these learning outcomes.</li> <li>4. Update the exam questions that students scored less than 70%.</li> </ol>	Improve student learning	2016

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

**III. Attached Files**

**Faculty/Preparer:** Connie Foster **Date:** 07/16/2016  
**Department Chair:** Connie Foster **Date:** 07/19/2016  
**Dean:** Valerie Greaves **Date:** 07/19/2016  
**Assessment Committee Chair:** Michelle Garey **Date:** 10/03/2016

**COURSE ASSESSMENT REPORT**

**I. Background Information**

1. Course assessed:  
 Course Discipline Code and Number: RAD 100  
 Course Title: Introduction to Diagnostic Imaging  
 Division/Department Codes: HAT/ALHD
  
2. Semester assessment was conducted (check one):  
 Fall 20\_\_  
 Winter 2008  
 Spring/Summer 2008\_\_
  
3. Assessment tool(s) used: check all that apply.  
 Portfolio  
 Standardized test  
 Other external certification/licensure exam (specify):  
 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.  
 Exam questions are modified each semester based on the lecture material.

5. Indicate the number of students assessed/total number of students enrolled in the course.  
 46 students (all students in the course; only one section of this course is offered during the Spring/Summer session)
  
6. Describe how students were selected for the assessment.  
 All students in the course were assessed.

**II. Results**

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.  
 Powerpoint lectures were modified and worksheets were created for students.
  
2. List each outcome that was assessed for this report exactly as it is stated on the course master syllabus.

Explain the historical development of diagnostic medical imaging.
Identify the different medical imaging modalities, their equipment, practice standards, and the principles of image production.
Identify the role of the radiologic technologist in the healthcare delivery system, their practice standards, educational requirements, professional organizations, and career outlook.

3. Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. *Please attach a summary of the data collected.*

Exam questions with less than 75% correct were examined (see attached list). Students scored <75% on 14 (28%) of the 50 exam questions. 5 of the 14 exam questions were on radiation protection. The remaining 9 questions were on different topics.

**COURSE ASSESSMENT REPORT**

4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success. *Please attach the rubric/scoring guide used for the assessment.*

The grade distribution for the class was: 8 students achieved between 90 – 100% ; 20 students achieved between 80 – 89%; 13 students achieved between 70 – 79%; 2 students achieved between 60 – 69%; and 3 students achieved between 40 – 59%.

Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Strengths: The students demonstrated an understanding of most of goals of the course.

Weaknesses: The main content area where student scored poorly was radiation protection.

**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.  
The lecture material on radiation protection will be reviewed and updated. Worksheets will be developed on the topic of radiation protection.

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  
 Handouts  
 Other: Departmental Examination

g.  Instructional methods  
Change/rationale:

h.  Individual lessons & activities  
Change/rationale:

3. What is the timeline for implementing these actions? The course syllabus, powerpoint presentations, course handouts and departmental exam will be revised for the 2009 Fall semester.

