Oregon Institute of Technology
Medical Imaging Technology Department
Radiologic Science Program Assessment
2012-2013

I. Introduction

The Radiologic Science program at Oregon Institute of Technology Klamath Falls campus is entering its 63rd year of educating future Radiologic Technologists. The program is proud of its strong retention rates from the sophomore (professional courses) to the senior year (externship). Because of limited space and teacher ratio, the radiology program limits the selection numbers to 48 students into the sophomore professional level each year. The program generally graduates between 44-48 students a year with a first time pass rate of the American Registry of Radiologic Technologists (ARRT) national examination of 100% over the past four years. The average salaries of those reporting for the 2011 graduating class was $53,482.

II. Summary of Program Purpose, Objectives and Student Learning Outcomes

The Radiologic Science faculty established the program purpose, objectives, and student learning outcomes in fall 2007 and reviewed fall 2012. The RDSC program director presented this to the advisory board spring 2012, the board fully supported the program purpose, objectives and learning outcomes.

Program Purpose

The purpose of the Radiologic Science Bachelor's Degree Program at Oregon Institute of Technology is to provide graduates with the knowledge, clinical skills, and compassion that will allow them to become exemplary medical imaging technologists and future leaders in radiology and advanced imaging professions.

Educational Objectives

The Radiologic Science program prepares graduates to:

- Be advanced leaders in the profession.
- Be compassionate, caring healthcare professionals.
- Be eligible, well-prepared, and able to sit for and pass the ARRT credentialing examination.
- Have immediate job placement within six months of graduation.
- Work in advanced imaging fields and sit for advanced imaging registries.

Expected Student Learning Outcomes
The Radiologic Science student will:

1. Demonstrate knowledge of x-ray physics and related math.
2. Demonstrate professional conduct and ethical decision making.
3. Demonstrate teamwork while conducting patient procedures.
4. Demonstrate effective critical thinking and problem solving skills.
5. Demonstrate effective patient care skills.
6. Utilize both written and oral communication effectively.
7. Recognize quality diagnostic images for both technical and anatomical criteria and have the technical ability to correctly repeat images when the quality is not adequate for diagnostics.
8. Demonstrate radiation safety for self, staff, and patients as set forth by the ALARA standards.
9. Demonstrate an understanding of advanced multiple ARRT imaging modalities and the need for lifelong learning.

Additional Student Learning Opportunities
RDSC students have additional learning opportunities through participation in Association of Collegiate Educators in Radiologic Technology (ACERT) conferences held in Las Vegas each year and attendance at the Oregon Society of Radiologic Technologists conference. The Radiologic Science student club participates in a joint venture with the Federal Fish and Wildlife Services of Klamath Falls, to identify fish species through digital imaging of the fish. In addition the junior imaging students have joined forces with the natural science department to image and record complete anatomical structures of 3 cadavers each year. RDSC students are provided optional opportunities to participate in multidisciplinary simulation lab experience emphasizing team work with the nursing, respiratory therapy and the Cascades East resident physician programs.

Senior RDSC students participate in an 11 month externship in a heath care facility where they are given the opportunity to apply and refine their didactic training into practical application. They are each mentored by a clinical instructor and work side by side with experienced radiologic technologists to better hone their skills. Students record all exams they participate in and complete 69 competency studies required by the ARRT to sit for the national registry examination. During the extern experience students also get to participate in specialty imaging modalities for 12 weeks; the time can be used to experience from one to three modalities.

By the completion of the senior year students are prepared to sit for the national registry examination for general radiography. It should be noted that some students have also completed the competencies required to take the examination for various specialty modalities as well.

III. Three-Year Cycle for Assessment of Student Learning Outcomes
The current cycle of assessment is shown in Table 1.

Radiologic Science Outcome Assessment	2011 2012	2012 2013	2013 2014	2014 2015
1. Demonstrate knowledge of x-ray physics and related math.	X			X
2. Demonstrate professional conduct and ethical decision making.		X		
3. Demonstrate teamwork while conducting patient procedures.		X		
4. Demonstrate effective critical thinking and problem solving skills			X	
5. Demonstrate effective patient care skills	X			X
6. Utilize both written and oral communication effectively			X	
7. Recognize quality diagnostic images for both technical and anatomical criteria and have the technical ability to correctly repeat images when the quality is not adequate for diagnostics		X		
8. Demonstrate radiation safety for self, staff, and patients as set forth by the ALARA standard.	X			X
9. Demonstrate an understanding of advanced multiple ARRT imaging modalities and the need for lifelong learning			X	

Table 1. Three year cycle for assessment of student learning outcomes.

IV. Summary of 2012-13 Assessment Activities

The program faculty formally assessed three student learning outcomes scheduled for this year, as well as reassessed PSLO #1.

PSLO #1: Demonstrate knowledge of x-ray physics and related math.

Direct assessment #1
The faculty assessed x-ray physics and related math in RDSC 202 Imaging Techniques II winter term 2012, using a lab project graded with a rubric. There were 50 students assessed, the general results were very positive but the supporting data was not retained.

The faculty re-administered PSLO #1, direct assessment #1 lab project in RDSC 202 Imaging Techniques II winter term 2013. There were 47 sophomore RDSC students assessed with results similar to the previous assessment.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Average score of cohort Calculation	Average score of cohort Performance
Technique Formulation Calculation	Calculation & Application	1pt calculation 1pt performance	90% should score 80% or higher	100%	100%
Relative Speed Calculation	Calculation & Application	1pt calculation 1pt performance	90% should score 80% or higher	98%	100%
Direct Square Law Calculation	Calculation & Application	1pt calculation 1pt performance	90% should score 80% or higher	94%	100%
Grid Conversion Factor Calculation	Calculation & Application	1pt calculation 1pt performance	90% should score 80% or higher	89%	100%
15% Rule with mAs Compensation Calculation	Calculation & Application	1pt calculation 1pt performance	90% should score 80% or higher	89%	100%

Table 2. Assessment Results for SLO #1 in RDSC 202, winter 2013

Direct Assessment #2
The faculty assessed this outcome in RDSC 202 in winter 2013 using exam questions. The same 47 sophomores were involved in this assessment. The faculty rated the proficiency of the students using the same performance criteria described in Table 3.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Average score of cohort
kVp Relationship with x-ray beam quality	Exam Questions	1pt each for 3 questions	80% should score 2 or higher	87%
mAs Relationship with x-ray beam quantity	Exam Questions	1pt each for 3 questions	80% should score 2 or higher	100%
Direct square law SID	Exam Questions	1pt each for 3 questions	80% should score 2 or higher	100%
Grid Relationship with density	Exam Questions	1pt each for 3 questions	80% should score 2 or higher	98%
15% Rule	Exam Questions	1pt each for 3 questions	80% should score 2 or higher	83%

Table 3. Assessment Results for SLO #1 in RDSC 202, winter 2013

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
X-ray physics and math comprehension	15 exam questions	Right or wrong answer	80% should score 80% or higher	90%

Table 4. Assessment results for SLO #1 in RDSC 202 winter 2013

The instructor looked at data by subject as shown in table three to identify subject areas of weakness. It was found that kVp relationship with beam quality is a difficult concept for students to grasp therefore additional lab and lecture emphasis will be added to reinforce this concept. Faculty reviewed all 15 questions and found the results exceeded expectations.

Direct Assessment # 3
Clinical Instructors were asked to rate students on this outcome with 16 CIs reporting, the results showed that 43.8% were highly prepared while 56.2% were sufficiently prepared, for a total of 100% at prepared or better.

Direct Assessment # 4
ARRT exam results for the June 2012 RDSC graduates using the ARRT Annual Program Summary Report 2012. The results for the image production and evaluation were used to assess this outcome. The exam had fifty questions for image production and evaluation which requires students to calculate miliampere and kilovoltage equations in relationship to a body part thickness to produce diagnostic images. Therefore this is a good measure of students' ability to apply math and physics to produce technical factors directly related to image production. The results of the 39 students who took the exam can be found in Table 5.

Performance Criteria	Assessment method	Measurement scale	Minimal acceptable performance	Results
Image Production and Evaluation	ARRT National Certification Exam Questions (50)	1-10	80% of students at or above the National average (8.3)	95%

Table 5. Assessment results for SLO 1, ARRT exam, April 2011-April 2012

Faculty are pleased with the above results. Comparing our results to the national average on this section of the exam, our students average 8.7 while the national average is 8.4. This section of the exam is often the most difficult part of the exam because it is measuring students' ability to calculate and apply math and physics for imaging production. 100% of our students are above the 75% passing score for this section of the exam. In addition all students passed this exam achieved certification with an average score of a 89.1% compared to the national average of 85.3%.

Indirect Assessment # 1
The faculty assessed student learning on this outcome by surveying the 2012 graduating senior extern students. The students were asked to rate their level of preparation. With 44 extern students reporting, the results showed that 23% indicated that they were highly prepared, while 77% indicated that they were adequately prepared, for a total of 100% at prepared or better.

PSLO #2: Demonstrate professional conduct and ethical decision making. The faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome to the Radiologic Science curriculum can be found in Appendix A-1.

Ethics

Direct Assessment #1
The faculty assessed ethics in RDSC 205 Patient Care using a rubric scored homework assignment. Forty-seven sophomores participated in this assessment. The performance criteria and results are shown in Table 6.

Performance criteria	Assessment method	Measurement scale	Minimal acceptable performance	Results 2009	Results 2012
Knowledge of the code	Rubric scored assignment	1 – 4 proficiency	90% at 3 or 4	100%	96%
Ethical issues	Rubric scored assignment	1 – 4 proficiency	90% at 3 or 4	100%	94%
Parties involved	Rubric scored assignment	1 – 4 proficiency	90% at 3 or 4	100%	96%
Alternative approaches	Rubric scored assignment	1 – 4 proficiency	90% at 3 or 4	100%	83%
Benefits and risks	Rubric scored assignment	1 – 4 proficiency	90% at 3 or 4	100%	100%

Table 6. Assessment results for SLO 2, RDSC 320, winter 2013, ethics

Faculty interpretation
Historically this ISLO was administered to RDSC juniors; for this cycle of assessment, data had to be collected from sophomores early in their RDSC educational process. Students did not expound on their answers (especially in the 2nd and 4th ethics questions), because many of the alternatives went against the ARRT Code of Ethics it was pointless to include them. This resulted in a low score based on the rubric. Even with the challenges with the assessment, the overall results exceeded the faculty expectations. The reason for the low score (83%) in alternative approaches was explained above.

Professionalism

Direct Assessment #2
The faculty assessed 48 junior students by rating them on 12 student professional behaviors in the academic setting in spring 2013, following the institution's criteria for professionalism. The criteria and results are shown in Table 7.

Performance criteria	Assessment method	Measurement scale	Minimal acceptable performance	Results 2009 % at 1 or 2	Results 2012
Timeliness	Professional Rating	0 to 2 scale	90% will score 1 or 2	87.2	100%
Quality; Course Expectations	Professional Rating	0 to 2 scale	90% will score 1 or 2	87.2	100%
Quality; Work Products	Professional Rating	0 to 2 scale	90% will score 1 or 2	87.2	100%
Attitude Towards Feedback	Professional Rating	0 to 2 scale	90% will score 1 or 2	98.4	100%
Attitude Towards Tasks	Professional Rating	0 to 2 scale	90% will score 1 or 2	89.4	100%
Punctuality	Professional Rating	0 to 2 scale	90% will score 1 or 2	95.7	100%
Attendance	Professional Rating	0 to 2 scale	90% will score 1 or 2	95.7	100%
Academic Integrity	Professional Rating	0 to 2 scale	90% will score 1 or 2	100	100%
Interpersonal Skills	Professional Rating	0 to 2 scale	90% will score 1 or 2	93.6	100%
Policies and Procedures	Professional Rating	0 to 2 scale	90% will score 1 or 2	100	100%
Work Ethic	Professional Rating	0 to 2 scale	90% will score 1 or 2	97.9	100%
Appearance	Professional Rating	0 to 2 scale	90% will score 1 or 2	97.9	100%

Table 7. Assessment results for SLO 2, professionalism, spring 2013

Faculty interpretation
The Radiologic Science faculty followed the institutional assessment of professionalism, which focused on student behavior in the academic environment. Extern students, however, leave the institution for their senior year. This presented some confusion on how to best evaluate extern students. The first three criteria in this assessment fell slightly below the benchmark set by faculty in the 2009 assessment. Modifications were made to the RDSC professional evaluation that is performed each term in the program to better prepare the student for externship. Upon reviewing the results of the 2013 professionalism assessment the faculty determined the

adjustment in the RDSC professional evaluation was instrumental in a positive shift in the student learning outcome. These results primarily reflect student performance on the campus and not on the externship. Externship students did not demonstrate problems in these areas; therefore it was the judgment of the faculty that extern students meet all criteria for this assessment.

Indirect assessment # 1
The faculty assessed student learning on this outcome by surveying graduating senior extern students. The students were asked to rate their level of preparation. With 43 extern students reporting, the results showed that 60.5 % indicated that they were highly prepared, while 37.2% indicated that they were adequately prepared, for a total of 97.7% at prepared or better.

PSLO #3: Demonstrate teamwork while conducting patient procedures. The faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome to the Radiologic Science curriculum can be found in Appendix A-1.

Direct assessment #1
The faculty assessed teamwork in fall 2012 in RDSC 301 Radiographic Positioning III using a rubric scored project where faculty reflected on student performance in groups. Forty-eight junior students were involved in the assessment, using the performance criteria described in Table 8.

Performance criteria	Assessment method	Measurement scale	Minimal acceptable performance	Results 2009	Results 2012
Achieves Goal/purpose	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	86%	92%
Assumes roles /responsibilities	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	86%	92%
Communicate Effectively	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	93%	92%
Reconciles disagreement	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	93%	92%
Share appropriately	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	86%	92%
Effective actions	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	100%	92%
Cultural Adaptation	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	100%	100%

Table 8. Assessment results for SLO 2, RDSC 301, fall 2012, faculty ratings on teamwork

Faculty interpretation
The faculty reviewed the results of the team assessment and concluded that the students have demonstrated proficiency as a group in the direct assessment of team work.

Indirect Assessment # 1
The faculty asked each student to rate the performance of their group on the same criteria that the faculty used above. The student results are shown below in Table 9.

Performance criteria	Assessment method	Measurement scale	Minimal acceptable performance	Results 2009	Results 2012
Achieves Goal/purpose	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	95%	96%
Assumes roles /responsibilities	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	98%	96%
Communicate Effectively	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	98%	96%
Reconciles disagreement	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	100%	96%
Share appropriately	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	95%	94%
Effective actions	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	100%	96%
Cultural Adaptation	Rubric scored project	1 – 4 proficiency	90% at 3 or 4	100%	Not Collected

Table 9. Assessment results for SLO 2, RDSC 301, fall 2012, student ratings on teamwork

Faculty interpretation
The indirect assessment score exceeded faculty expectation and are in accordance with the direct assessment SLO results, therefore no intervention is required at this time. The indirect SLO did not measure cultural adaptation due to oversight during rubric design; however, negative issues concerning cultural diversity have not been reported or observed by the RDSC faculty during this assessment.

Direct assessment #2
As a supporting direct assessment the faculty compiled externship data on teamwork using clinical supervisor professional evaluation reports in May 2013, using the following performance criteria:

- Works well with and assist others
- Communicates effectively with the group
- Sets aside personal differences for the team's success

The clinical instructors gave a single score encompassing the above criteria. 63% of the clinical instructors rated their student(s) as "highly prepared" while 31% received "sufficiently prepared" and 6% rated their student at "insufficiently prepared".

PSLO #6: Recognize quality diagnostic images for both technical and anatomical criteria and have the technical ability to correctly repeat images when the quality is not adequate for diagnostics. The faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome can be found in Appendix A-3.

Direct Assessment #1
The faculty assessed this outcome in RDSC 301 in fall 2012 using a practical exam. There were 48 juniors involved in the assessment. The faculty rated the proficiency of students using the performance criteria described in Table 10 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	2008 Results	2012 Results
Technical Criteria	Practical Exam	Scale 1-5 out of 5 possible categories	90% of students will score 5	94%	82%
Anatomical Criteria	Practical Exam	Scale 1-6 out of 6 possible categories	90% of students will score 6	86%	85%
Quality recognition	Practical Exam	Scale 0-4 out of 4 possible pts	90% of students will pass 4	71%	90%
Repeat image recognition	Practical Exam	Pass / fail 0 or -5	90% of students will pass with a zero	100%	94%

Table 10. Assessment Results for SLO #6 in RDSC 301, fall 2012

Faculty interpretation
Students demonstrated acceptable performance for image quality recognition and repeat image recognition. They did not meet standards, for technical criteria and anatomical criteria.

Factors identified by faculty that may have contributed to students not meeting the measures in the SLO #6 include:

- Technical Criteria
  - Tools were not utilized to assure proctor scoring validity resulting in inconsistency.
  - Scoring guide was generalized resulting in difficulty identifying isolated skills.
- Anatomical Criteria
  - Student instructions were changed from the 2008 instructions. The 2008 instructions informed students the activity would be scored as a pass/fail whereas the 2012 students were graded on a varying scale.
  - The faculty also identified that the activity's score was a lower percentage of the overall assessment grade, speculating that students focused on other higher valued activities, thus less effort was given to the assessed activity.

- Quality Recognition
    - The scoring guide for quality recognition was edited as stated in the 2008 assessment report. The revised guide did improve the grading process; however, the faculty will explore other testing options to better critique this skill set quantitatively.

The repeat image recognition portion of this SLO was valid and students exceeded faculty expectations.

It is the intention of the faculty to edit and implement these tools fall term 2013.

Direct Assessment #2
The faculty assessed this outcome in RDSC 301 in fall 2012 using Film Critique. The same 48 juniors were involved in the assessment. The faculty rated the proficiency of students using the performance criteria described in Table 11 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	2008 Results	2012 Results
Anatomical Criteria	Film Critique	0 or 3pts out of 3pts	90% will score 3 pts	89%	85%
Quality Recognition	Film Critique	0 or 1 pt out of 1 pt	90% will score 1 pt	94%	90%

Table 11. Assessment Results for SLO #6 in RDSC 301, fall 2012

Faculty interpretation
The students met an acceptable level of performance on the image quality portion of this assessment. The anatomical criteria data collection tool of this assessment will be revisited by the faculty.

Direct Assessment #3
The faculty assessed this outcome with a survey of externship clinical instructors in spring 2013 using the same performance criteria as the assessments above. Sixteen clinical instructors responded. The results are shown in Table 12 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	2009 Results	2013 Results
Technical criteria	Extern survey	1-4 prep scale	95% score 4	89.3%	93.7%
Anatomical criteria	Extern survey	1-4 prep scale	95% score 4	85.7%	93.7%
Quality recognition	Extern survey	1-4 prep scale	95% score 4	85.2%	93.7%
Repeat image recognition	Extern survey	1-4 prep scale	95% score 4	78.5%	93.7%

Table 12. Assessment Results for SLO #6 in RDSC 410, Spring 2013

Faculty interpretation
The faculty reviewed these results and were not surprised, as understanding and learning what good quality diagnostic images look like only comes with experience. Unfortunately, the four

criteria for this assessment were grouped in one survey question. However, with the corrective measures implemented fall term 2009 the faculty feel the overall results reflect an improvement in this SLO.

Indirect Assessment #1
Finally, the faculty assessed this outcome in RDSC 410 in Spring 2013 using an extern survey. Forty-four externs responded to the survey. Externs rated their own proficiency using the performance criteria described in Table 13 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	2009 Results	2013 Results
Technical criteria	Extern survey	1-4 prep scale	95% score 4	100%	97.7%
Anatomical criteria	Extern survey	1-4 prep scale	95% score 4	100%	97.7%
Quality recognition	Extern survey	1-4 prep scale	95% score 4	100%	97.7%
Repeat image recognition	Extern survey	1-4 prep scale	95% score 4	100%	97.7%

Table 13. Assessment Results for SLO #6 in RDSC 410, Spring 2013

Faculty interpretation
The faculty reviewed these results and are satisfied that the students are adequately prepared to recognize repeat images, according to their own self-assessment.

Detailed records of this assessment can be found in the Radiologic Science coordinator's notebook.

V. Summary of Student Learning Outcomes

The program faculty met in June 2013 to review the assessment work for the year and drew the following conclusions.

PSLO #1: Demonstrate knowledge of x-ray physics and related math.
Strengths: Student performance exceeded faculty expectations with both the exam questions and the laboratory calculations followed by radiographic exposure.
Weaknesses: The lowest cohort score was related to the 15% rule calculation, historically students have struggled with the concept of the 15% rule due to the complexity of the factors this technical adjustment influence or control. The performance score of 83% exceeded the minimum acceptable score of 80%.
Actions: Faculty agreed no action is required for PSLO #1 at this time.

PSLO #2: Demonstrate professional conduct and ethical decision making.
Strengths: Professionalism:
Implementation of adjustments made in the RDSC professional evaluation resulted in a positive shift in student performance outcome.
Ethics:
Students exceeded faculty expectations through appropriate application of the ARRT code of ethics in the assigned scenario.

Weaknesses: Professionalism:
The outcome of professionalism was very positive; however, the process of evaluating each RDSC student every term is a time and labor intensive process for the faculty.
Ethics:
Due to RDSC course sequencing changes, data for the ethics assessment had to be collected from sophomore students that had minimum exposure to the ARRT code of ethics. In previous years the data was collected from the junior class.

Actions: Professionalism:
No action required; however the RDSC faculty will explore avenues to improve the efficiency of the programmatic professional evaluation process.
Ethics:
No action required; however the RDSC faculty would prefer to assess juniors for the next cycle. Therefore, other courses for data collection will be investigated.

PSLO #3: Demonstrate teamwork while conducting patient procedures.

Strengths: Students exceeded faculty expectations for PSLO #3. The faculty believe the scores of this PSLO reflect the efforts by the faculty to reinforce the importance of teamwork during scheduled and open lab practice times.

Weaknesses: The faculty are satisfied with the tools and results for this PSLO.

Actions: No action is required at this time.

PSLO #6: Recognize quality diagnostic images for both technical and anatomical criteria and have the technical ability to correctly repeat images when the quality is not adequate for diagnostics.

Strengths: Faculty believe the overall results reflect the learning process of students in this PSLO. PSLO #6 is a perfect example of the art and science of radiography in that the identification of repeat images is a qualitative exercise in many cases. This is indicated by the improvement of scores as student mature in the profession of radiography.

Weaknesses: While the overall results are acceptable some of the measurement tool could use some refining. This is primarily due to the qualitative nature of these skills. The three tools that will be examined more closely in direct assessment #1 will be the measurement of:

- Technical Criteria
- Anatomical Criteria
- Quality Recognition

Actions: The following steps will be taken for each of the following measurements:

- Technical Criteria
    - Grading rubric and proctor grading instructions will be edited to strengthen grader validity. By improving grader validity data collected during practical exams will be more reliable.
- Anatomical Criteria
    - The faculty will edit student test instructions for better consistency and add more value to the portion of the test that identifies the anatomical criteria proficiency.

- Quality Recognition
    - Although the tool for measuring this skill was improved over the 2008 assessment, the faculty will explore other tools to be implemented to better measure this skill quantitatively. The tool being discussed at this time is using multiple choice exam questions rather than assessing the skill during the practical exam being graded by proctors.

Appendix A-1
Radiologic Science
SLO-Curriculum Map – Check with current map

PSLO #2: Demonstrate professional conduct and ethical decision making.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced
R = Reinforced
E = Emphasized

	Sophomore			**Junior**			**Senior**		
Fall	RDSC 201	Imaging Techniques I	I	RDSC 301	Radiographic Positioning III	E	RDSC 410	Extern	E
	RDSC 235	Equipment Operation & Maintenance	I	RDSC 320	Surgical, Trauma & Mobile Radiography	E			
				BIO 336	Pathophysiology				
				RDSC 355	Computed Tomography	I			
Win	RDSC 202	Imaging Techniques II	R	RDSC 356	Magnetic Resonance	I R			
	RDSC 205	Patient Care					RDSC 410	Extern	E
	RDSC 210	Radiographic Positioning I							
	RDSC 366	Radiographic Pathology							
Spr	PHY 217	Physics of Medical Imaging	I	RDSC 326	Cardiovascular/ Interventional Technology		RDSC 410	Extern	E
	RDSC 211	Radiographic Positioning II	E R	RDSC 354	Mammography				
	RDSC 233	Contrast Media Procedures		RDSC 365	Advanced Quality Assurance/Quality Control				
	BIO 335	Cross-Sectional Anatomy		RDSC 388	Externship Prep				
	RDSC 272	Radiation Protection	I						

Appendix A-2
Radiologic Science
SLO-Curriculum Map

PSLO #3: Demonstrate teamwork while conducting patient procedures.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced
R = Reinforced
E = Emphasized

	Sophomore			**Junior**			**Senior**		
Fall	RDSC 201	Imaging Techniques I		RDSC 301	Radiographic Positioning III	R E	RDSC 410	Extern	E
	RDSC 235	Equipment Operation & Maintenance		RDSC 320	Surgical, Trauma & Mobile Radiography	R E			
				BIO 336	Pathophysiology				
				RDSC 355	Computed Tomography				
Win	RDSC 202	Imaging Techniques II		RDSC 356	Magnetic Resonance	E			
	RDSC 205	Patient Care	I				RDSC 410	Extern	E
	RDSC 210	Radiographic Positioning I	I						
	RDSC 366	Radiographic Pathology							
Spr	PHY 217	Physics of Medical Imaging		RDSC 326	Cardiovascular/ Interventional Technology	R E	RDSC 410	Extern	E
	RDSC 211	Radiographic Positioning II	R E	RDSC 354	Mammography	R E			
	RDSC 233	Contrast Media Procedures	R E	RDSC 365	Advanced Quality Assurance/Quality Control				
	BIO 335	Cross-Sectional Anatomy		RDSC 388	Externship Prep				
	RDSC 272	Radiation Protection							

Appendix A-3
Radiologic Science
SLO-Curriculum Map

PSLO #6: Recognize quality diagnostic images for both technical and anatomical criteria and have the technical ability to correctly repeat images when the quality is not adequate for diagnostics.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced
R = Reinforced
E = Emphasized

	Sophomore			**Junior**			**Senior**		
Fall	RDSC 201	Imaging Techniques I	I	RDSC 301	Radiographic Positioning III	R E	RDSC 410	Extern	E
	RDSC 235	Equipment Operation & Maintenance	I	RDSC 320	Surgical, Trauma & Mobile Radiography	R E			
				BIO 336	Pathophysiology				
				RDSC 355	Computed Tomography	I			
Win	RDSC 202	Imaging Techniques II	I R	RDSC 356	Magnetic Resonance				
	RDSC 205	Patient Care					RDSC 410	Extern	E
	RDSC 210	Radiographic Positioning I	R E						
	RDSC 366	Radiographic Pathology							
Spr	PHY 217	Physics of Medical Imaging		RDSC 326	Cardiovascular/ Interventional Technology	R	RDSC 410	Extern	E
	RDSC 211	Radiographic Positioning II	R E	RDSC 354	Mammography				
	RDSC 233	Contrast Media Procedures	R E	RDSC 365	Advanced Quality Assurance/Quality Control				
	BIO 335	Cross-Sectional Anatomy		RDSC 388	Externship Prep				
	RDSC 272	Radiation Protection	I						