

IDAHO STATE UNIVERSITY – Program Assessment Summary Report

Program: Radiographic Science

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PURPOSE OF THE RADIOGRAPHIC SCIENCE PROGRAM

The Radiographic Science Program is designed to develop the technical skills and knowledge necessary for the student to satisfactorily function in the role of a radiologic technologist. The program seeks to provide pertinent learning experiences which will enable the student to demonstrate competency in the technical aspect of the profession as well as the human relations aspect. The program further seeks to develop the students' interests in the professional societies as well as the possibilities for continuing education.

The Radiographic Science Program is eighteen months in duration after completing the necessary prerequisites. During this two-year period, the student will receive didactic experience at the University, combined with clinical experience at the affiliated hospitals and clinics. The student can earn a Bachelor of Science or an Associate of Applied Science degree after satisfactorily completing the appropriate curriculum. Upon satisfactory completion of the radiographic science curriculum and prerequisites, the student is eligible to write the national registry examination for radiologic technologists sponsored by the American Registry of Radiologic Technologists (ARRT).

Bachelor of Science in Radiographic Science

The Bachelor of Science degree is a four-year curriculum. During the first two years the student takes general education, basic science, and business courses at the University. During the two professional years, the student studies and practices the clinical application of radiography at the University's energized laboratory and at affiliated hospitals. The graduate is eligible to take the national examination for certification administered by the ARRT.

Associate of Applied Science in Radiographic Science

The Associate of Applied Science degree is awarded to students in the Baccalaureate program who have not completed all of the curriculum requirements for the pre-professional years of the program. This allows the student to take the ARRT exam if the student has not completed the entire pre-professional curriculum, but has completed the entire professional curriculum. By awarding the AAS degree the student can then become certified, begin work as a radiographer, and complete the missing pre-professional courses. Upon completion of those courses the student can then apply for the baccalaureate degree. For this reason, 98% of radiographic science students at ISU graduate with a Bachelor of Science in Radiographic Science degree.

A variety of assessment methods are used to determine if the student is achieving the goals of the program. Some of these include: tests, laboratory exercises, projects, assignments, student demonstrations, image critiques, observation, and performance evaluations.

The Radiologic Technologist is one of many individuals who work together as a team to meet the needs of the medical community and society by providing patients with the best possible care. Because of the rapid growth of the medical field, there is an ever increasing need for radiologic technologists.

PROGRAM PHILOSOPHY

Idaho State University's Radiographic Science Program was developed with the philosophy that didactic education and clinical experience, which includes "hands on" should happen together for continuity during learning. Therefore, during the entire program the student learns in the laboratory setting and applies those skills acquired in the clinical setting. This happens on a weekly basis. Furthermore, in the classroom students acquire the theoretical information necessary to perform as technologists. The next step involves laboratory experiences where the opportunity to apply technological skills is acquired by using phantoms and simulations. Students then progress and perfect their skills by working with technologists in a clinical environment. Additionally, several of the classes are taught by the Physics, Biology, and Healthcare Administration Faculties. This is atypical of most Radiographic Science programs and is a unique feature that sets the program apart from other programs. Our philosophy is that students that learn from experts become experts. When graduation approaches students are ready to enter the profession confidently.

MISSION STATEMENT

The Mission of the Radiographic Science Program is to provide students with both the academic and technical foundations to competently and safely perform Radiologic procedures, to prepare qualified imaging technologists who will ethically respond to the needs of patients with technical competence and compassion, and to assume a vital professional role as a medical team member.

Vision

Prepare leaders in radiography for today and tomorrow by providing baccalaureate education.

Core Values

- Academics – Promoting excellence in all academic endeavors.
- Knowledge – recognizing the significance of new knowledge in a profession that is predisposed to change while maintaining traditional values and emphasizing the needs of the patient.
- Dedication – to help meet the statewide and regional needs by providing access to quality education to prospective students.
- Community – to help meet the needs of the community in the health care setting by providing competent, qualified, technologists who are eligible upon graduation to sit for the national certification examination in radiography sponsored by the American Registry of Radiologic Technologists (ARRT)

PROGRAM GOALS/OUTCOMES

The Radiographic Science Program faculty promotes knowledge and discovery for all students in our program by committing to the following goals:

1. Students will use critical thinking and problem-solving skills.
2. Students/graduates will be clinically competent.
3. Students will be able to effectively communicate.
4. Students will demonstrate the importance of professional growth and development.

Student Driven Outcomes Assessment

The Radiographic Science Program and the Division of Health Sciences also administers a Student Driven Outcomes Assessment each semester. This assessment is a method used to evaluate the program from the vantage point of our customer, the student. Continuous Quality Improvement guides program officials in looking for opportunities to improve in all aspects of the collegiate experience provided to our customer. The assessment includes a four question evaluation administered at the end of each semester. Students are asked to answer the following questions:

1. Has the Radiographic Science Program met your expectations?
2. Would you recommend the Radiographic Program to another student?
3. List the Top 3 Positive experiences this semester.
4. List 3 things that would enhance the experience in the Radiographic Science Program.

This assessment tool, which includes all student responses, an evaluation by faculty, an action plan, follow-up, and all survey results, can be reviewed on the department Web site. It is titled "Division of Health Sciences Student Driven Outcomes Assessment Plan, and is located at the bottom of the page at the following hyperlink:

[Division of Health Sciences Student Driven Outcomes Assessment](#)

Outcomes Assessment Plan

Radiographic Science Program

The Radiographic Science Program at Idaho State University will provide a quality and diverse education that enables our graduates to become a valuable member of the health care team.

Goal 1: Students will use critical thinking and problem-solving skills.					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
1-Students will write clearly and accurately in a variety of contexts while checking, editing, and revising their written work for correct information, appropriate emphasis, form, style, and grammar.	Annotated bibliography assignments in RS4450, AMA style of writing	All students will receive a >90% at the completion of the 4 th assignment	Fall Semester	Faculty	2012: Average 95% 16 students >90% 01 student =89% 2013: Average 92% 15 students>90% 02 students= 88%, 86% 2014:Average=93%
2-Students will demonstrate the ability to utilize appropriate technology to acquire, organize, analyze, and communicate information in written form.	Library Instruction Test offered by Ruiling Guo	All students will receive a ≥90% on the exam	Fall Semester	Faculty	2012: 10 students =100% 6 students=90% 1 student did not take 2013: Pretest scores=66% average posttest=91% 2014:Pretest Scores=59.9% Posttest=93.8%
3-Students will be able to adjust changes, situations, patient condition, and/or deviations from the norm.	Clinical Final Evaluation Form in RS 3390 and RS 4490	Students will receive a rating ≥ 4 on a likert scale 1-5 Q6 Was able to adjust to changes, situations, patient condition, and/or deviations from the norm.	Spring Semester	Faculty	2013: 94% 2014: 100%

Action/Analysis:

1.-Benchmark not met with 1 student, but was within 1%. Will continue monitoring.

2- 2012:17 students attended the library workshop. 16 students who handed in their trial test papers and 1 did not. The test results showed that out of 16 students, 10 (62.5%) passed the test with a 100% score and 6 (37.5%) with a 90% score. In summary, all the students who took the trial test have met the goal and expectation for basic library skills and knowledge.

In addition, my findings showed that there was no difference between the students who previously attended library workshops or not. Out of 10 students with a 100% score, 4 attended at least one library workshop before and 6 did not attend any library workshop. Out of 6 students with a 90% score, 4 attended at least one library workshop before and 2 did not attend any library workshop. Whether they previously attended the library workshops or not did not affect their score much.

I have sent you a copy of their test papers and library teaching handouts for your information via campus mail. Again, I told your students that the test was just a trial which would not be part of their course grade. I'd like to share this information with you so that you know how well your students did on this trial test. When you have time late this semester or next spring, I will be happy to discuss with you more about how to assess the effectiveness of students' learning if you wish.

Results/Followup: All students will be required to take the test during the next evaluation period and the score will be included in the course calculation of grade.

2013: Ruiling administered a pre test and a post test prior to the lecture this year to measure the learning and to get an idea if students were benefiting from the exercise. The pretest scores averaged 66% and the post test scores averaged 91%. There is statistically significant difference between before and after library workshop ($p < .001$). The benchmark was met, but will continue to monitor in 2014. A paper was generated by the Librarian and RS faculty. It was submitted to the Radiologic Technology Journal for publication and will print in the Sept/Oct issue 2014, in the educational section.

Update: this article will print in the January/February 2015 Rad Tech Journal

2014: Results showed the significant differences of learning outcomes before and after the library workshop again. This validates this learning exercise for the students.

Goal #2: Students/graduates will be clinically competent.

Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
1.Students will apply positioning skills.	RS 3342 Clinical Competency Form (Random Sampling of four competencies per student)	Each exam is worth 25 points for a possible 100 point total. Average score of >80%.	2 nd Year –Fall Semester	Clinical Coordinator	2008=97% 2009=93% 2010=95% 2011=92% 2012=98% 2013=98% 2014=97%
2. Student will select appropriate technical factors	RS 3330 Radiographic Exposure Class -Final exam grades	Average score of >80%.	1 st Year – Fall Semester	Course Instructor	2011=95% 2012=97% 2013=98% 2014=98%
3. Students will demonstrate competency in all mandatory and elective competencies with no greater than 2 simulations when applying to sit the ARRT exam.	Competency Spreadsheet	no > 2 simulated exams per student out of the 31 mandatory examinations required by the ARRT	Each graduating Class	Program Director/Clinical Coordinator	2012=none 2013=none 2014=none

Students will practice radiation protection.	RS 3388 Radiation Protection- Comprehensive Final Exam Grades	Average score > 80%.	1 st Year – Spring Semester	Course Instructor	2012=95.35% 2013>95% 2014=94%
	Every year students will complete annual radiation training through the technical safety office.	All students will score 100%	1 st and 2 nd Year –Fall Semester	Clinical Coordinator	2012: 100% 2013: 100% 2014:100%
	RS 3342	Average score of >80% in the competency check off for these labs	Fall Semester	Course Instructor	2013=89% 2014=86%
	Clinical Final Evaluation Form	Students will receive a rating ≥ 4 on a likert scale 1-5 Q 9 Was mindful of patient protection and used proper collimation and shielding.	Fall and Spring Semester	Clinical Coordinator	2013=100% 2014=100%

Action/Analysis:

Goal 3: Students will be able to effectively communicate.					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
1.Students will write clearly and accurately in a variety of contexts while checking, editing, and revising their written work for correct information, appropriate emphasis, form, style, and grammar.	10-12 page research paper in RS 4450, AMA style of writing	All students will receive a >80% at the completion	Fall Semester	Course Instructor	2010>90% 2011>90% 2012>92% * 2013>90% * 2014>92% *
2.Students will communicate clearly to the CI's by completing an inventory analysis of contrast media used in the clinical environment	RS 3342 Lab Worksheet	>80% on the clinical site contrast media inventory assignment for Imaging of the lower GI.	Fall Semester	Clinical Coordinator	2012: 97.5% average for all students (1=86%, 4=93%, 12=100%). 2013: 98.5% 13=100%, 3=95%, 1=90%. 2014: 95.3% 7=100%, 9=94% 1=88%, 1=82%

*Student papers are published on the department website at http://www.isu.edu/radsci/student_research14.shtml/

Goal #4: Students will demonstrate the importance of professional growth and development.					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
Students will determine the importance of continued professional development by performing research and performing well clinically	RS 4450, Senior students will write an 8-10 page literature review or case study and submit the work to a professional society competition.	All students will receive a >80% at the completion of the paper and an ISU student will place 1 st , 2 nd , or 3 rd place at the ACERT and/or ISRT conference.	Fall Semester	Faculty	2007 100% 2008 100% 2009 100% 2010 100% 2011 100% 2012 100% 2013 100% 2014 100% 2015 100%*
	Final Clinical Evaluation form.	Students will receive ≥ 4 on questions 1, 2, and 3. Q1 Actively participated in the examination room assigned to. Q2 Used time effectively. Q3 Completed assigned tasks.	Spring Semester	Faculty	2013 100% 2014 94%

Action/Analysis:

* Student placed 1st, 2nd, and 3rd in the ACERT essay competition held in Las Vegas in February of 2015. Wendee Morgan, 1st place, Michelle Smith, 2nd place, and Joseph Spencer, 3rd place.

Program Effectiveness Measures					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
1.Students will pass the national certification examination on the 1 st attempt.	National Certification Exam 1 st Time Pass Rates	100% each year	6 months post graduation (or upon completion by all)	Program Director	2008: 100% 2009: 100% 2010: 94.7% 2011: 94.7% 2012: 100% 2013: 100% 2014: 94.7% *4 5 year Avg 97%
2.Students who are actively seeking a job will be gainfully employed within 6 months post-graduation.	Graduate Survey Or “word of mouth” On line Alumni Survey	75% or higher yearly 75% 5 year average	post graduation survey	Program Director/Clinical Coordinator	2008: 94% 2009: 88% 2010: 83% 2011: 81% 2012: 77% as 9/21/2012 word of mouth 2013=94.6% 2014=100 5 year average=87%
Job Placement Rate 1 year from graduation for those actively seeking a job.	Graduate Survey or “word of mouth” On line Alumni Survey	75% of those actively seeking employment within 12 months of graduation	12 months post graduation	Program Director/Clinical Coordinator	2008:100% 18/18 2009:100% 18/18 2010:94% 17/18 2011: 89% 16/18 2012: 89% 16/18 2013: 100% 17/17 5 year average = 94%
3.Students will complete the program.	Graduation roster	100%	End of program	Program Director	2008: 100% 2009:100% 2010: 100% 2011:100% 2012: 100% 2013:94.6% 2014: 94.6%

4. Graduates will be satisfied with their education by feeling prepared for their 1 st job.	Graduate Alumni Survey	≥ 4 (5 point scale)	Alumni Survey	Program Director	2010 9/18= 4.7 2011 13/18=4.7 2012 12/18=4.6 2013 17/17 = 4.5 2014 17/17 = 4.9
5. Employers will be satisfied with the performance of newly hired technologists	Employer Survey	≥ 4.0 (5point scale)	12 months post graduation	Program Director	2009=4 2010= 5 2011=4.75 2012= 5.0 2013=4.6

Action/Analysis:

1. 2011: One student failed on the first attempt. The student has retaken the exam and passed.
2. 2013 #3: One student dropped out of the program due to financial resources; cut off from financial aid
3. 2014: One student dropped out of the program due to a chronic back injury
4. 2014: One student failed on the first attempt. The student retook the exam approximately 4 weeks later and passed.

ACTION

- a. Faculty felt perhaps not enough study was performed by the student; also the student did not request additional time from the ARRT for test anxiety.
- b. Course evaluations of the Registry Review class were reviewed for the spring of 2014 by the faculty. On a likert scale of 1-5 with 1 being “strongly agree” and 5 being “strongly disagree”, the vast majority rated this class as a 1 for all 16 questions asked. Some comments from students include that the class was a very good prep for the registry.
 - i. Faculty will stress with students the importance of studying
 - ii. Students will be made aware that testing accommodations may be requested when applying to sit the exam by the ARRT. (See minutes of student orientation fall 2014, dated 8/26 and 8/28.)

Program Ongoing Assessment (New 2013)					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible Party	Results
1. Faculty will review curriculum yearly.	Documentation in advisory committee meeting minutes or during JRCERT self study phase.	100% each year	Fall Semester	Program Director	2012 JRCERT Self study 2013: 100% 2014: 100%

1. Reviewed in Advisory Committee meeting on October 18, 2013; reviewed ASRT BSRS curriculum document and compared objectives to ISU's course syllabi; see meeting minutes.
2. Reviewed in Advisory Committee meeting on May 1, 2014.