

Weber State University  
Biennial Report on Assessment of Student Learning

Cover Page

Department/Program: School of Radiologic Sciences Bachelor Programs  
Academic Year of Report: 2020/21 (covering Summer 2019 through Spring 2021)  
Date Submitted:  
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Contact Information:

We have updated the Institutional Effectiveness website, which includes an update for each program page. All Biennial Assessment and Program Review reports will now be available on a single page. Please review your page for completeness and accuracy, and indicate on the list below the changes that need to be made. Access your program page from the top-level [results](#) page. Select the appropriate college and then your program from the subsequent page.

**A. Mission Statement**

**Information is current; no changes required.**

Update if not current:

**B. Student Learning Outcomes**

(please note the addition of certificate and associate credential learning outcomes)

**Information is current; no changes required.**

Update if not current:

**C. Curriculum** (please note, we are using Google Sheets for this section so that updates are easier to make)

**Information is current; no changes required.**

Update if not current (you may request access to the Google Sheet if that is easiest, or we can make the updates):

(Please review your current curriculum grid and verify that at least one course has been identified for each outcome in which you expect your students to demonstrate the desired competency of a graduating student. This could be shown in a variety of ways: classroom work, clinical or internship work, a field test, an ePortfolio, etc.)

**D. Program and Contact Information**

**Information is current; no changes required.**

Update if not current:

### **E. Assessment Plan**

We have traditionally asked programs to report on outcome achievement by students at the course level. We are encouraging programs to consider alternative assessment approaches and plans that are outcome-based as opposed to course-based, though course-based assessment can continue to be used. A complete assessment plan will include a timeline (which courses or which outcomes will be assessed each year), an overall assessment strategy (course-based, outcome-based, reviewed juries, ePortfolio, field tests, etc.), information about how you will collect and review data, and information about how the department/program faculty are engaged in the assessment review.

**X** **Information is current; no changes required.**

Update if not current:

### **F. Student Achievement**

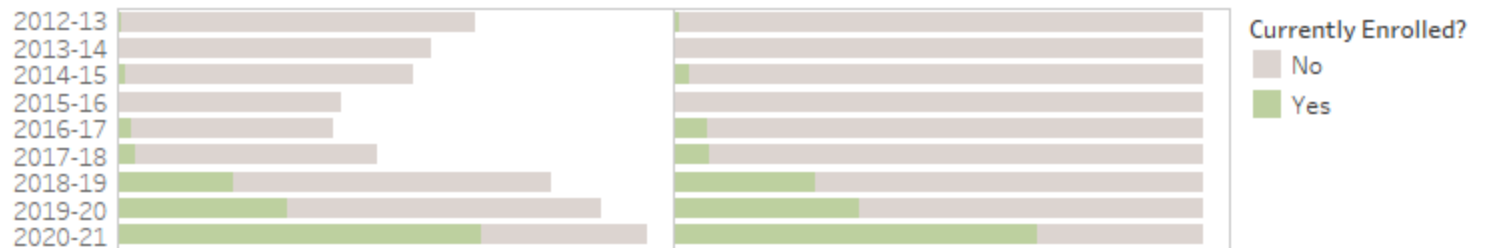
- i. Percent of students completing degrees after 90 credit hours within 2 years and a reflection on that metric (this information can be accessed on the Program Review Undergraduate dashboard – tab labeled, ‘Time to Grad from 90CH – please reach out to [oe@weber.edu](mailto:oe@weber.edu) if you need help with this metric). What department initiatives are in place to address this?
- ii.

### Additive Program Unit Percentages

Data for the most recent three years reflect in-progress students and may change over time

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
In 1 Year or Less	16%	14%	11%	19%	29%	26%	19%	25%	11%
In 2 Years or Less	31%	33%	33%	38%	50%	47%	36%	30%	11%
In 3 Years or Less	45%	48%	49%	56%	64%	61%	42%	30%	11%
At Any Point	54%	57%	55%	59%	68%	61%	42%	30%	11%
Has Not Graduated	46%	43%	45%	41%	32%	39%	58%	70%	89%

### Has Not Graduated by Currently Enrolled



These numbers include all undergraduate programs for the School of Radiologic Sciences as it is not possible to separate AAS from BS degrees.

## Evidence of Learning

There are varieties of ways in which departments can choose to show evidence of learning.

### 1) Course-based assessment

- a. This is the format we have traditionally suggested programs use for assessment. The familiar 'evidence of learning worksheets' are included in the template and can also be accessed from the IE website. The critical pieces to include are:
  - i. learning outcomes addressed in the course,
  - ii. method(s) of measurement used,
  - iii. threshold for 'acceptable – that is, the target performance,
  - iv. actual results of the assessment,
  - v. interpretation/reflection on findings,
  - vi. the course of action to be taken based upon the interpretation,
  - vii. how that action will be evaluated.

### 2) Outcome-based assessment

- a. Moving from course-based to outcome-based assessment has the potential for programs to gather and reflect upon data that are more meaningful, and to connect assessment findings from throughout the program. The approach may be much easier for associates and certificate programs where only select students in classes are earning the credential. For more information email ([gniklason@weber.edu](mailto:gniklason@weber.edu))

#### b. Reporting options include:

- i. A traditional evidence-of-learning [worksheet](#) with an outcome (across multiple courses) as the focus (instead of a course with multiple outcomes).
- ii. A report that is more [narrative-based](#).
- iii. Other tools such as an ePortfolio in which key or signature assignments have been identified by the faculty, and uploaded by the student with their reflection. The key or signature assignments are aligned to student learning outcomes. (ePortfolio is an excellent assessment tool for certificates and associate degrees.)
- iv. There are other approaches such as juried reviews, physical portfolios, field tests, etc.

- 3) General Education course assessment needs to continue to be reported at the course level using either the [traditional template](#) or a more [narrative-based format](#). See the [Checklist and Template](#) page for area-specific worksheets as well.

**Note: if you cannot download templates directly from this document, please visit our [template page](#) for downloads.**

A. Evidence of Learning: Courses within the Major  
 (this is a sample page for purpose of illustration only; a blank template can be found on the next page or at [this site](#))

Overview of Learning Outcomes for AAS and BS Degrees

<b>Current learning outcomes</b>	<b>Courses that correspond to learning outcomes</b>
Identify the biological effects of radiation.	RADT 1303; 2403; 3403; 2913; 4942
Demonstrate proper radiation protection procedures during diagnostic procedures.	RADT 1022; 3 1502/1601; 1512/1621; 1522/1641; 1542/1681; 2861-2865; 2913; 4942
Demonstrate proper use and understanding of radiation exposure monitors and diagnostic radiation equipment.	RADT 1303, 2403 1502/1601; 1512/1621; 1522/1641; 1542/1681; 2861-2865; 2913; 4942
Demonstrate, select, accurately explain and produce diagnostic quality radiographs.	RADT 1303; 2403; 3443; 1502/1601; 1512/1621; 1522/1641; 1542/1681; 2913; 4942
Demonstrate repeated competency in accurately explaining the proper <b>radiographic image production, image processing, and digital image formation</b>	RADT 1303; 2403; 3443; 3463; 3563; 1502/1601; 1512/1621; 1522/1641; 1542/1681; 2861-2865 2942; 2913; 4433; 4443; 4810; 4942
Demonstrate and accurately interpret quality assurance testing.	RADT 1303; 2403; 3443; 1601-1681; 2861-2865; 2913; 4243; 4253; 4942
Demonstrate proper evaluation and critique of radiographic positioning, technical factors, anatomy, physiology and pathology.	RADT1502/1601; 1512/1621; 1522/1641; 1542/1681; 3443; 1301; 2403; 2913; 3143; 3144; 4942
Demonstrate legal and professional responsibility.	RADT 1022; 3003; 3043; 3423; 2043; 2913; 4942
Demonstrate appropriate patient education, safety and comfort skills.	RADT1022; 2043; 3003; 3243; 3253; 1502/1601; 1512/1621; 1522/1641; 1542/1681; 2042; 2043; 2913; 3003; 4203; 4572; 4942

Demonstrate acceptable methods of infection control and prevention.	RADT1022; 2043; 2042; 3003; 2263; 1502/1601; 1512/1621; 1522/1641; 1542/1681 2913; 4942
Demonstrate proper patient monitoring and administration of contrast during radiographic procedures.	RADT 2043; 2042; 3003; 2861-2865; 2913; 3263; 4942
Demonstrate appropriate responses to diverse patient populations.	RADT 3003; 3043; 2942; 2861-2865; 2913; 4573; 4942
Demonstrate a sense of professionalism and desire to learn.	RADT 1022; 3003; 3043; 2821-2825; 2913; 2821-2825; 4942
Demonstrate working knowledge of radiographic anatomy, sectional anatomy, structural relationship and pathology	1502/1601; 1512/1621; 1522/1641; 1542/1681; 2272; 2861-2865; 2913; 3123; 4303; 4403; 4413; 4942
Demonstrate clinical procedures in a simulation environment.	RADT 4610; 4611; 4612; 4942
Demonstrate leadership/supervision, strategic planning, and fiscal budgeting skills.	RADT 4213; 4223; 4233
Demonstrate research gathering and dissemination of healthcare information. Demonstrate the ability to articulate in writing relevant research information	RADT 4803; 4833; 4922; 4933; 4943; 4942; 4992

Bachelor Program Evidence of Learning

<b>Advanced Radiography, Imaging Specialties and Radiation Therapy</b>			
<b>Advance Radiography/CORE</b>			
<b>Objective</b>	<b>Internal Measurement</b>	<b>External Measurement</b>	<b>Data Collection</b>
Upon completing the Program of choice, the student will be able to:			
Identify the biologic effects of ionizing radiation	Successful completion of RADT 3403, RADT 3443	Certification examination results	Annually
Demonstrate proper radiation protection procedures during diagnostic procedures	Successful completion of: RADT 4863 – CT RADT 4861& 4862 – Mammo NUCM 4861, 4862. 4863 RATH 4861, 4862. 4863	Certification examination results  Employer surveys	Annually  Every 3 years
Demonstrate patient assessment, monitoring and management skills	Successful completion of: RADT 3243 RADT 3253 RADT 3263, RADT 4303 RATH 4425– Rad Therapy Clinical evaluations	Certification examination results  Employer surveys	Annually  Every 3 years
Demonstrate appropriate patient education, safety and comfort skills.	Successful completion of: RADT 3003, RADT 3043 RADT 4203, RADT 4223 Radt 4572-- Mammography RATH 4425– Radiation Therapy	Certification examination results  Employer surveys	Annually  Every 3 years



	Clinical evaluations		
Demonstrate legal, professional and ethical responsibility	Successful completion of: RADT 3003, RADT 3043 RADT 4253, RADT 4233 Clinical evaluations	Certification examination results	Annually
Demonstrate knowledge of anatomy, physiology and pathophysiology	Successful completion of: RADT 3023, RADT 3123 RADT 3143, 4423 &, 4403 All courses in the specific programs pertaining to imaging. Clinical evaluations	Certification examination results  Employer surveys	Annually  Every 3 years
Demonstrate appropriate responses to diverse patient populations	Successful completion of: RADT 3003, RADT 3023 RADT 4203, RADT 3243 RADT 3253,  Clinical evaluations	Certification examination results  Employer surveys  Graduate surveys	Annually  Every 3 years  Every 3 years
Demonstrate knowledge and application of federal regulations	Successful completion of: RADT 3043, RADT3423 RADT 4243, RADT 4253 RADT 4213 Clinical evaluations	Certification examination results  Employer surveys	Annually  Every 3 years

Demonstrate a sense of professionalism and desire to learn	Successful completion of: RADT 4803, RADT 4933 RADT SI4943, RADT 4922, RADT 4942, RADT 4992 Active participation in professional organizations; acceptance into graduate programs	Exit interviews  Graduate surveys  Employer surveys	Annually  Every 3 years  Every 3 years
Demonstrate continued competency through life-long learning	Active participation in professional organizations  Acceptance into graduate school	Maintenance of active certification status  Employer surveys  Employment rate  Graduate surveys	Every 3 years  Every three years  Every three years  Every 3 years
<b>Computerized Tomography/Magnetic Resonance Imaging (CT/MRI)</b>			
Demonstrate proper use of imaging equipment	Successful completion of: RADT 4603, RADT 4623 RADT4663, RADT 3463 Clinical evaluations: RADT 4863	Certification examinations results  Employer surveys  Graduate surveys	Annually  Every 3 years  Every 3 years
Demonstrate proper selection of technical factors to produce diagnostic images	Successful completion of: RADT 4633, RADT 4643 RADT 4613, RADT 4653 RADT 4942, RADT 4912 Clinical evaluations	Certification examination results  Employment rate  Graduate surveys	Annually  Annually  Every 3 years

Demonstrate and accurately interpret quality assurance testing	Successful completion of: RADT 3443, RADT 4603 RADT 4663  Clinical evaluations	Certification examination results  Employer surveys	Annually  Every 3 years
Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology	Successful completion of: RADT 4633, RADT 4643, RADT 4613, RADT 4653, RADT 4623, RADT 4911 and RADT 4912	Certification examination results  Employer surveys  Employment rate  Graduate surveys	Annually  Every 3 years  Annually  Every 3 years
<b>Cardiovascular-Interventional Technology (CIT)</b>			
Demonstrate proper use of imaging equipment	Successful completion of: RADT 3463, RADT 4942 ARRT certification Clinical evaluations: RADT 4863	Certification examination results  Employment rate	Annually  Annually
Demonstrate proper use of technical factors to produce diagnostic images	Successful completion of: RADT 4313, RADT 4333, RADT 4343 Clinical evaluations	Certification examination results	Annually
Demonstrate and accurately interpret quality assurance testing	Successful completion of: RADT 3443, RADT 3463 Clinical evaluations & ARRT certification	Certification examination results	Annually

Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology	Successful completion of: RADT 4313, RADT 4333, and RADT 4343	Certification examination results  Employment rate  Employer surveys	Annually  Annually  Every 3 years
<b>Women's Imaging Mammography</b>			
Demonstrate proper use of imaging equipment	Successful completion of: RADT 4563 Clinical evaluations: RADT 4861, RADT 4862	Certification examination results  Employment rate  Employer surveys	Annually  Annually  Every 3 years
Demonstrate proper selection of technical factors to produce diagnostic images	Successful completion of: RADT 4553, RADT 4563 Clinical evaluations: RADT 4861, RADT 4862	Certification examination results  Employment rate  Employer surveys	Annually  Annually  Every 3 years
Demonstrate and accurately interpret quality assurance testing	Successful completion of: RADT 4583 Clinical evaluations: RADT 4861, RADT 4862	Certification examination results  Employer surveys	Annually  Every three years
Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy and pathology	Successful completion of: RSDT 4553, RADT 4563, RADT 4572 Clinical evaluations: RADT 4861, RADT 4862	Certification examination results  Employer surveys  Employment rate	Annually  Every 3 years  Annually

<b>Diagnostic Medical Sonography</b>			
Demonstrate proper use of imaging equipment	Successful completion of: DMS 4103, DMS 4641, DMS 4642, DMS 4643 DMS 4644, DMS 4645 Clinical evaluations: DMS 4861, 4862, 4863, 4864, 4865, 4866, 4867	Certification examination results  Employer surveys  Exit interviews  Employment rate	Annually  Every 3 years  Annually  Annually
Demonstrate proper selection of technical factors to produce diagnostic images	Successful completion of: DMS 4103, DMS 4303, DMS 4323, DMS 4343, DMS 4403, DMS 4503, DMS 4523 Clinical evaluations	Certification examination results  Exit interviews  Employer surveys  Graduate surveys  Employment rate	Annually  Annually  Every 3 years  Every 3 years  Annually
Demonstrate and accurately interpret quality assurance testing	Successful completion of: DMS 4103, DMS 4143 Clinical evaluations	Certification examination results	Annually
Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, contrast injection and pathology	Successful completion of: DMS 4303, DMS 4323, DMS 4343, DMS 4403, DMS 4503, DMS 4523 Clinical evaluations	Certification examination results  Exit interviews  Employer surveys  Graduate surveys	Annually  Every three years  Every three years  Annually

		Employment rate	
<b>Nuclear Medicine</b>			
Demonstrate proper use of imaging equipment	Successful completion of: RADT 3463, NUCM 4303, NUCM 4333 Clinical evaluations: NUCM 4861, 4862, 4863	Certification examination results  Employer surveys  Graduate surveys  Employment rate	Annually  Every 3 years  Every 3 years  Annually
Demonstrate proper use of radiopharmaceuticals & technical factors to produce diagnostic images	Successful completion of: NUCM 4103, NUCM 4203, NUCM 4213 NUCM 4303, NUCM 4333, NUCM 4223 Clinical evaluations	Certification examination results  Employer surveys  Graduate surveys  Employment rate	Annually  Every 3 years  Every 3 years  Annually
Demonstrate and accurately interpret quality assurance testing	Successful completion of: NUCM 4303, NUCM 4333 ARRT certification in radiography	Certification examination results  Employer surveys	Annually  Every 3 years
Demonstrate proper evaluation and critique of diagnostic images for accuracy of technical factors, patient positioning, anatomy, nuclide injection, and pathology	Successful completion of: NUCM 4103, NUCM 4203, NUCM 4213, NUCM 4223  Clinical evaluations	Certification examination results  Employer surveys  Employment rate  Graduate surveys	Annually  Every 3 years  Annually  Every 3 years

<b>Radiation Therapy</b>			
Demonstrate proper use of treatment equipment	Successful completion of: RATH 4330, RATH 4342 RATH 4444 Clinical evaluations: RATH 4861, 4862, 4863	Certification examination results  Employer surveys  Graduate surveys  Employment rate	Annually  Every 3 years  Every 3 years  Annually
Demonstrate proper interpretation of treatment prescriptions, treatment fields and procedures	Successful completion of: RATH 4410, RATH 4412, RATH 4414, RATH 4444 Clinical evaluations: RATH 4861, 4862, 4863	Certification examination results  Employer surveys  Graduate surveys  Employment rate	Annually  Every 3 years  Every 3 years  Annually
Demonstrate and accurately interpret quality assurance testing	Successful completion of: RATH 4330, RATH SI4446  ARRT certification in radiography	Certification examination results  Employer surveys  Graduate surveys  Employment rate	Annually  Every 3 years  Every 3 years  Annually

<p>Demonstrate proper evaluation and critique of treatment simulation and delivery, patient positioning and protection, anatomy and pathology</p>	<p>Successful completion of:  RATH 4342,  RATH 4410,  RATH 4412,  RATH 4414,  RATH 4444  Clinical evaluations</p>	<p>Certification examination results   Employer surveys   Graduate surveys   Employment rate</p>	<p>Annually   Every 3 years   Every 3 years   Annually</p>
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## Appendix A

Most departments or programs receive a number of recommendations from their Five/Seven-Year Program Review processes. This page provides a means of updating progress towards the recommendations the department/program is enacting.

Date of Program Review: ####	Recommendation	Progress Description
Recommendation 1	Text of recommendation	Additional space would be a need for the school of radiologic science, however, this is unlikely to become available. Therefore, the faculty have been creative in utilizing the current space with flexible schedules, lab assistants, and lecture capture technology. Although efforts have been made to adjust for inadequate space, there is still a great need for additional space to better support student learning.
Date	Obtain more classroom/lab space	
Recommendation 2	Text of recommendation	Progress Description
Date	Simulation courses	Add simulation instruction to bachelor courses for additional learning and assessment. Some bachelor programs have simulation equipment while others do not.
Recommendation 3	Text of recommendation	Progress Description

Additional narrative:

## Appendix B

Please provide the following information about the full-time *and adjunct faculty* contracted by your department during the last academic year (summer through spring). Gathering this information each year will help with the headcount reporting that must be done for the final Five Year Program Review document that is shared with the State Board of Regents.

Faculty Headcount	2018-19	2019-20	2020-21
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)			
Full-time Tenured	3	3	3
Full-time Non-Tenured (includes tenure-track)	0	1	2
Part-time and adjunct	1	1	1
With Master's Degrees			
Full-time Tenured	1	1	1
Full-time Non-Tenured	6	5	4
Part-time and adjunct	8	8	8
With Bachelor's Degrees			
Full-time Tenured			
Full-time Non-tenured			
Part-time and adjunct			
Other			
Full-time Tenured			
Full-time Non-tenured			
Part-time			
<b>Total Headcount Faculty</b>	<b>19</b>	<b>19</b>	<b>19</b>
Full-time Tenured	4	4	4
Full-time Non-tenured	6	6	6
Part-time			

**Please respond to the following questions.**

- 1) Review and comment on the trend of minority students enrolling in your classes (particularly lower-division, GEN Ed) and in your programs.
- 2) What support (from enrollment services, advising, first-year transition office, access & diversity, etc.) do you need to help you recruit and retain students?

Recruiting and marking in national two year radiography programs that do not have a bachelor program option.

- 3) We have invited you to re-think your program assessment. What strategies are you considering? What support or help would you like?  
Better access to campus demographic and statistical data when planning for creating and measuring assessment practices and policies.
- 4) Finally, we are supporting our Concurrent Enrollment accreditation process. Does your program offer concurrent enrollment classes? If so, have you been able to submit the information requested from the Concurrent Enrollment office? Staff from OIE will reach out to you in the next few months to assist in finalizing that data submission as well as gather information for concurrent Gen Ed assessment.  
None of the courses in Radiologic Sciences are offered through Concurrent Enrollment.

## Glossary

### Student Learning Outcomes/Measurable Learning Outcomes

The terms ‘learning outcome’, ‘learning objective’, ‘learning competency’, and ‘learning goal’ are often used interchangeably. Broadly, these terms reference what we want students to be able to do AFTER they pass a course or graduate from a program. For this document, we will use the word ‘outcomes’. Good learning outcomes are specific (but not too specific), are observable, and are clear. Good learning outcomes focus on skills: knowledge and understanding; transferrable skills; habits of mind; career skills; attitudes and values.

- Should be developed using action words (if you can see it, you can assess it).
- Use compound statements judiciously.
- Use complex statements judiciously.

### Curriculum Grid

A chart identifying the key learning outcomes addressed in each of the curriculum’s key elements or learning experiences (Suskie, 2019). A good curriculum:

- Gives students ample, diverse opportunities to achieve core learning outcomes.
- Has appropriate, progressive rigor.
- Concludes with an integrative, synthesizing capstone experience.
- Is focused and simple.
- Uses research-informed strategies to help students learn and succeed.
- Is consistent across venues and modalities.
- Is greater than the sum of its parts.

### Target Performance (previously referred to as ‘Threshold’)

The level of performance at which students are doing well enough to succeed in later studies (e.g., next course in sequence or next level of course) or career.

### Actual Performance

How students performed on the specific assessment. An average score is less meaningful than a distribution of scores (for example, 72% of students met or exceeded the target performance, 5% of students failed the assessment).

### Closing the Loop

The process of following up on changes made to curriculum, pedagogy, materials, etc., to determine if the changes had the desired impact.

### Continuous Improvement

An idea with roots in manufacturing, that promotes the ongoing effort to improve. Continuous improvement uses data and evidence to improve student learning and drive student success.

### Direct evidence

Evidence based upon actual student work; performance on a test, a presentation, or a research paper, for example. Direct evidence is tangible, visible, and measurable.

### Indirect evidence

Evidence that serves as a proxy for student learning. May include student opinion/perception of learning, course grades, measures of satisfaction, participation. Works well as a complement to direct evidence.

### HIEE – High Impact Educational Experiences

Promote student learning through curricular and co-curricular activities that are intentionally designed to foster active and integrative student engagement by utilizing multiple impact strategies. Please see <https://weber.edu/weberthrives/HIEE.html>