

**Midlands Technical College # 0240**  
**Assessment Plan SLO and Analysis Template**  
(This cycle for the plan below: August 2020-July 2024)

<b>Goal #1– Possess the knowledge of positioning skills, technical factor solutions, and the utilization of radiation protection to be clinically competent as an entry-level radiographer.</b>					
<b>Student Learning Outcomes</b>	<b>Measurement Tools</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Actual Data Results</b>	<b>Past 3 – 5 years of Data Results</b>
1.1 1.1.1. Demonstrate an understanding of x-ray production to include equipment operation of x- ray tube, accessory devices needed to produce the image, and all basic technical skills.	Successfully label and define all parts of the x- ray tube. RAD 110 F	Semester 3	80% of the students will successfully label and define all parts of the x-ray tube on the final exam with at least 85% accuracy.	1.1.1 Not Met	2024- 78% N= 10/17 2023-25% N= 4/16
	Final exam label x- ray tube and filament circuits. RAD 121 S.	Semester 5	80% of the students will successfully label and define all parts of (single-phase X- ray tube and filament circuits) on the Final Exam with at least 85% accuracy	1.1.2 Not Met	2024-75% N=12/16 2023-57% N= 8/14 2022- 89% N= 8/9
1.2. Demonstrate an understanding of the ethical responsibility for health care workers to protect patient privacy and to ensure infection control in paper #2.	HIPAA and Infection Control paper. RAD 100 F.	Semester 1	80% of the students will achieve an 85% or better on the rubric for “How HIPAA and Infection Control are Important to Healthcare in Regards to	1.2 F Met	2024-100% N=10/10

			Radiology” paper #2.		
1.3. Demonstrate an understanding of the Health Insurance Portability and Accountability Act and of the OSHA and CDC guidelines regarding Standard Precautions.	Complete modules on D2: on HIPAA, BBP and Covid. RAD 153 S.	Semester 2	80% of the students will score 80% or higher on their first attempt on three quizzes presented through D2L, covering HIPAA, Infection Control and Bloodborne Pathogens	1.3 S Met  Outcome adjusted for 2024	2024-100% N=17/17 2023- 81% N=13/16 2022- 77% N=10/13 2021-88.2% N=13/15
1.4. Students will develop a knowledge level to perform well on examination #1, Shoulder, Humerus, Clavicle and Scapula.	Evaluation #1 RAD 130 F.	Semester 3	80% of the students will achieve an overall score of 85% or better on examination #1; Shoulder, Humerus, Clavicle and Scapula	1.4. F Met	2024 -100% N=17/17 2023-81% N=13/16 2022- 77% N=10/13 2021- 88.2% N=13/15
1.5.1 Demonstrate positive level of engagement during 3 semesters academic courses	August 200 question mock #1 RAD 165 F	Semester 4	80% of the students will complete Mock #1 with a 75% or higher	1.5.1 F Not Met  New Outcome for 2023	2024- Not given weather hurricane. 2023-29% N= 4/14
1.5.2 Students will complete 75% of the Corectec assignments by assigned due date	Corectec assignments RAD 220 S	Semester 6	80% of the students will complete 80% of the Corectec assignments by the corresponding due date	1.5.2 S Met	2024- 93% N=13/14 2023-93% N 13/14 2022-100% N=12/12 2021-83% N= 15/18

1.5.3 Demonstrate knowledge required of a rising senior student and eventually that required of an entry level registered radiologic technologist and determine readiness for ARRT National Board Satisfactorily pass midterm test which is based on the course objectives.	Mock registry #4 RAD 220 M	Semester 6	80% of the students will score 80% or higher on the equipment related questions across the four final 200 question exam of the 5th semester	1.5.3 Not Met  Changed from test #4 to current for 2024	2024- 57% N 8/14 2023- 89% N=8/9 2022- 58% N=7/12 2021- 83% N= 15/18
1.6. Complete the assigned rubric demonstrating methods radiographers can provide radiation protection to patients and others.	Student Academic Class Clinical Setting RAD 235 F.	Semester 3	85% of the students will score an 85% radiation protection rubric	1.6 F Met	2024-100% N =17/17 2023-100% N=17/17 2022- 72.7% N=8/11 2021-100% N=16/16 2020-100% N=17/17
1.7.1 Will utilize radiation protection methods during radiographic/fluoroscopic examinations	Clinical Setting Clinical Evaluation RAD 165 F.	Semester 4	85% of the students score 2.5 (scale of 3) on 5 of the 15 "instructor Competency Grading Sheets", item #4, "Evidence of Radiation Protection."	1.7.1 F Met	2024-100% N= 17/17 2023-87.5% N=14/16 2022-100% N=10/10 2021-75% N=12/16 2020- Covid No data
1.7.2	Radiation worksheet RAD 235 S	Semester 3	80% of the students will score 85% or better on the effects of radiation worksheet. RAD 235	1.7.2 S Not Met	2024- 47% N= 8/17 2023- 68% N= 11/16 2022- 72.7% N=8/11

1.8.1. Demonstrate satisfactory knowledge on check offs of chest and abdomen.	Chest anatomy and positioning test Abdomen anatomy and positioning test RAD 101 F.	Semester 2	85% of the students will score with 85% accuracy or better on 12 specific questions from the chest	1.8 F Met	2024- Che 94.9% N= 18/19 Abd- 87% N 16/18 2023- Chest 94.8% Abdomen- 87% N=16.5/18- 87% 2022- Chest 31% N=5/16 Abdomen- 63% N=10/16 2021- 86.1% N=31/36
1.8.2.	Recheck competency of chest and abdomen examination RAD 155 S.	Semester 3	85% of the students will score at least a 2.8 on the recheck examinations of the chest and abdomen on the first attempt	1.8.2 S Met	2024-100% N=14/14 2023- 100% N=14/14 2022-72.7% N=8/11
1.9. Demonstrate a positive work ethic during clinical rotations.	Instructor Performance evaluation, #6. RAD 153 F	Semester 2	85% of the students will achieve a successful rating of 4 (5point scale) or above on the Instructor Performance Evaluation, #6 "Productivity: Output of Satisfactory work".	1.9 F Not Met	2024-63% N= 12/19 2023 72% N=13/18 2022-100% N=16/16 2021-93% N=13/14 2020-100% N=18/18
1.10.1 Complete a skull project. This project requires the production of 19 preselected radiographic images. These images will have	Skull project RAD 258 F	Semester 5	90% of the students will achieve of 90% or better on the skull project. Category	1.10.1 F Met	2024-100% N=14/14 2023 100% N=14/14 2022-40% N=6/15 2021-53% N=8/15 2020-89% N=16/18

the anatomy, positioning criteria and the evaluation criteria labeled on each radiograph.			7 to reflect grade in clinic course		
1.10.2	Portfolio score Rubric RAD 268 S	Semester 6	80% of the students will achieve of 95% or better on the portfolio. Category 7 to reflect grade in clinic course	1.10.2 S Not Met	2024- 53% N= 9/15 2023- 93% N=13/14 2022-46% N=6/13

Analysis- Of the 16 outcomes reviewed, 9 were met, 7 were not. So, 56% were achieved as compared to 50% in 2024 and 63.5% in 2023. So, we increased 6% but still 7.5% below our best cycle. In 2024, confusion was created when our main clinical affiliate developed a “no shielding” policy. This affected three hospitals and a very large, multi-office orthopedics practice. This was difficult not only for the students and faculty but is caused changes in a few of the outcomes developed. This issue continues to plaque the students in learning radiation protection and technique. We are still adjusting with the new class. Two specific outcomes deal with labeling of x-ray equipment and imaging questions. The faculty for these sections will be reviewing the manner of the wording of questions on the test. The faculty will be providing quizzes during this course to establish the need for continual review of the material. This did improve the RAD 110 outcome with a 53% increase but still shy of meeting the outcome by 2%. The 2024 outcome for RAD 121 had a 18% increase, but still 5% shy of meeting the outcome. The seniors in 2024 just turned off early in the last semester causing 2 outcomes to not be met by the lack of participation. Several are very consistent from year to year of meeting the desired goal and then not. Faculty agrees this is more of a class characteristic/level of motivation.

**Action Plan based on Analysis:** At the close of each semester faculty meet for a SLO meeting. The outcomes for the semester completed are reviewed and then discussion is held by all faculty on what can be done to improve the score. Communication became the issue when shielding practice was stopped. Faculty rebooted the project to adapt to the new policy and focused more on collimation. Our junior classes lately have been slow to start in accepting responsibility for assignments. Faculty have made certain all dates are located on the D2L droboxes, discussed in class and placed on the calendar in the classroom. Faculty also began using more quizzes this year to encourage earlier preparation for tests.

**Results/Improvements noted:** Faculty noted the lower scores due to the changing of policy on shielding. This change took time for discussion, learning the reasoning behind the changes so the faculty could explain the changes in projects. These few outcomes should increase in score over the next few years.

**Re-evaluation Date:** Summer 2026.

<b>Goal #2: Ability to Communicate effectively to both written and oral forms.</b>					
<b>Student Learning Outcomes</b>	<b>Measurement Tools</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Actual Data Results</b>	<b>Past 3 – 5 years of Data Results</b>
2.1.1 Present a Pathology paper using APA formatting skills	Pathology Presentation RAD 130 F	Semester 3	80% of the students will achieve a 90% or better on the “APA” rubric for papers	2.1.1F Met <b>New outcome for 2023</b>	2024-100% N=16/16 2023- 100% N= 14/14
2.1.2. Present final Pathology paper using APA formatting skills	Pathology Presentation RAD 136 S	Semester 4	90% of the students will achieve a 95% or better on the “APA” rubric for papers	2.1.2 S Met	2024-100% N=12/12 2023-94% N=15/16 2022-90% N=9/10 2021-93% N=14/15 2020-94% N=17/18
2.1.3. Demonstrate an understanding of life-long learning and professional development opportunities	Clinical Setting RAD 258 M.	Semester 5	85% of the students will score 85% or higher on the continuing education essay rubric.	2.1.3 Met	2024-100% N= 16/16 2023- 93% N= 13/14 2022-100% N= 9/9
<b>Proficiency in Oral Communications</b>					
2.2.1 Present final pathology paper using effective oral communications skills	Pathology Presentation RAD 130 F	Semester 3	80% of the students will achieve a 3.3 or better on the “Oral Communication” rubric.	2.2.1 Met	2024-83% N=10/12 2023-100% N=14/14
2.2.2. Present final pathology paper using effective oral communications skills	Pathology Presentation RAD 136 S	Semester 4	80% of the students will achieve a 3.6 or better on the	2.2.2 Met	2024-83% N=10/12 2023-50% N=7/14 2022-80% N=8/10 2021-93% N= 14/15

			"Oral communication rubric."		2020-78% N= 14/18
2.2.3 Demonstrate a successful presentation of the second radiographic case study	Clinical Setting RAD 268 M	Semester 6	90% of the students will score 80% on the Trauma rotation radiograph.	2.2.3 Met	2024-93% N= 13/14 2023-28.5% N= 4/14

**Analysis:**

Again, this year more of the students assessed had taken ENG 160-Technical Communications as the prerequisite. This is a combination course composed of ENG 102- English Composition II and SPC 205-Public Speaking. These groups are doing well. They are taking this course closer to the start of the program is the reason for the success. Outcome 2.2.3 M, in 2023, only 28.5% of the seniors participated and did well. The successful students were attentive to the faculty members during the discussion of the required rubric and its use as a tool. The remaining students lacked in content and depth of the research they presented compared to the expectations. In 2024 this percentage of success increased by 64.5% to 93% meeting the outcome.

**Action Plan based on Analysis:** Faculty discussion at the outcome meeting entailed methods to move the student away from the computer and use note cards to discuss the pathology on display. The faculty members teaching this course will also add the use of "props" the peers can touch or hold as a part of the presentation. This could pull the students from the computer and be more eye-to-eye with their peers. This will hopefully increase the scores for the oral communications rubric outcome. Faculty sees this as another tool to engage the students in learning pathologies.

**Results/Improvement Noted:** The success of ENG 160 will have to be evaluated for at least one more year for the data to prove this course was a successful move for our students. Faculty is excited to see the "props" the students will use to demonstrate the pathology. Faculty will have to add in a line item on the oral presentation rubric for the quality of the "prop".

**Re-evaluation Date:** Summer 2026.

**Goal #3: Will be able to problem solve using critical thinking skills.**

Student Learning Outcomes	Measurement Tools	Timeframe	Benchmark	Actual Data Results	Past 3 – 5 years of Data Results
3.1. Use critical thinking skills to adapt standard procedures for non-routine patients,	Competency Examinations RAD 130 F.	Semester 3	90% of the students will successfully complete test #1 on Weight Bearing	3.1 F Not Met	2024-83% N= 15/18 2023=69% N=11/16 2022-85% N=11/13 2021-71% N=15/21 2020-83% N=15/18

weight bearing studies: Feet, Ankles, Knees			Examinations with an 85% or better		
3.2. Use critical/problem solving skills on one non-routine patient exam such as a stretcher/portable chest, bleeding or broken extremity, and extremity on a patient in cervical collar.	Project rubric Non-routine patient exam RAD 165 S	Semester 4	80% of the students will score an 85% or better on the rubric created for this non-routine patient	3.2 S Met	2024-81.3% N= 13/16 2023-78.5% N=11/14 2022-80% N= 8/10
3.3. Correctly answer 20 of 30 pathologic questions provided on the 100-question final examination. The remaining 70 questions will be skull anatomy and positioning content related.	Final examination RAD 136 F	Semester 4	85% of the students achieve a 70% (20 of 30) or better on pathologic questions on the final examination	3.3 F Not Met	2024- 58% N=7/12 2023-50% N=7/14 2022-100% N=9/9 2021-73% N=11/15
3.4. Demonstrate the knowledge and understanding of appropriate modality and exam selection for GI and GU systems as well as the accompanying dose to the patient for each	Fluoroscopic Project rubric RAD 268 S	Semester 6	80% of the students will achieve an 85% or better on the Fluoroscopy Project rubric	3.4 S Not Met	2024- 58% N=7/12 2023-71.4% N=10/14 2022-17% N=2/12 2021-72% N=13/18 2020- 94.1% N=16/17
3.4.1 Demonstrate the level of critical thinking skills on reasoning, resolution, condition of patient,	Clinical Settings RAD 258 S	Semester 5	80% Students will average a 2.5 or better on a critical analysis of 5 repeated images.	3.4.1 S Met	2024-100% N=16/16 2023-64.3% N=9/14 2022-88.9% N=8/9 2021- 93% N=14/15 2020-100% N=11/11



anatomy, proper alignment, technical factors, radiation protection and image identification.			Likert scale will be added to current repeat analysis form.		
3.4.2 Demonstrate understanding of competent patient care procedures, infection control methods, and proper communication methods.	Student Academic Class RAD 102 F	Semester 2	90% of the students will score 4 out of 5 on the "Infection Control Chart".	3.4.2 F Not Met	2024- 84.2% N=16/19 2023-100% N=14/14 2022-37.5% N= 6/16 2021-68.8% N= 11/16 2020- 94.7% N=18/19
3.4.3 Understanding of competent patient care procedures, infection control methods, and proper communication methods.	Donning and removal of full PPE. RAD 165 S	Semester 4	80% of the students will score 85% or better on PPE rubric when demonstrating to faculty the donning and removal of full PPE for Isolation Precautions and Covid patients	3.4.3 S Met	2024- 94% N= 15/16 2023- 94% N=15/16 2022- 60% N= 6/10
3.5.1 Demonstrate skill in measuring vital signs to include: blood pressure, pulse, and respiration.	Human Patient simulator RAD 102 F.	Semester 2	85% of the students will score 80% or better on the rubric when measuring vital signs on classmates.	3.5.1 F Met	2024-100% N=19/19 2023- 88% N=14/16
3.5.2 Identify and describe the equipment needed and the technologist's role during four types of	Medical Emergency Chart RAD 155 S	Semester 3	80% of the students will score an average of 3.2 on a 4.0 scale on the medical emergency chart	3.5.2 S Met	2024- 100% N=17/17 2023-100% N=17/17

medical emergencies in the healthcare facility.					
3.6.1 Demonstrate their understanding of technical factors, quality control, and exposure values to produce quality diagnostic x-rays in the clinical setting	Technical factor log RAD 110 F	Semester 3	80% of the students will score at least 80% on this project based on completion percentage of log.	3.6.1 F Met	2024-100% N=17/17 2023-100% N=17/17 2022-91% N= 10/11
3.6.2. Demonstrate their understanding of technical Factors, quality control, and exposure values to produce quality diagnostic images in the clinical setting.	Short paper on project RAD 121 S	Semester 5	85% of the students will score at least 80% on this QA project	3.6.2 S Not Met	2024- 56% N= 9/16 2023-71% N=10/14 2022- 89% N=8/9
3.7.1. Demonstrate proper body mechanics on five non-routine patients. Examples: moving from stretcher to table or wheelchair to table.	Likert scale rubric RAD 153 F	Semester 2	85% of the students will average 2.6 or higher on these rubrics.	3.7.1 F Met	2024-100% N=19/19 2023-50% N=9/18 2022-100% N=15/15 2021-100% N=15/15
3.7.2 Faculty to create 5 patient care scenarios requiring demonstration by the student on a variety of body mechanics	Likert scale rubric RAD 258 S	Semester 5	90% of the students will score 85% or better on rubric using a Likert scale.	3.7.2 S Not Met	2024-56.3% N= 9/16 2023- 93% N=13/14 2022-88% N=8/9 2021-33% N= 5/15
<b>Analysis:</b> A wide variety of critical thinking objectives were used. Of the 13 used, 7 outcomes were met ,54%, 6 did not, 46% Once the students reach the third semester the basics are completed, and confidence comes. The third semester also brings in the trauma rotations from 2:00-10:00 PM at the level I trauma center in our area. This rotation along with one weekend challenges their critical thinking skills. The conversion of “textbook perfect” patients to “real life” trauma patients is present in most of the cases they do on these rotations. The percentages on a few of outcomes fluctuate so much from year to year. It is difficult to make a statement when the faculty who teaches the					

skills have not changed. The rotations have not changed, but there are more traveling faculty at our facilities this past year than in the past. We also had the adjunct faculty step in and assist with completing these movements rubrics. Overall, the use of adjunct faculty the first year may have brought our percentages down as they too were learning the expectations of the outcomes.

**Action Plan based on Analysis:** This section is sequential in its structure. Faculty had acted on the recommendations from last year by using the simulation center in Health Sciences to create more realistic patient care situations has been a bonus for the students. Their critical thinking has improved on the trauma rotations. In RAD 136 the pathology and fracture terms were provided earlier and due earlier for checking by the faculty for correctness. This should have given the student more time to study the terms as there are approximately 150 total. The School of Healthcare will be exploring multi-disciplinary scenarios this coming year. Faculty anticipates deeper critical thinking situations that will require increase communications between the other programs.

**Results/Improvements:** Even though 7 of the 13 outcomes were met there is still much more growth do due. We are in the 2<sup>nd</sup> year with adjunct faculty, and the communication has also increased between the full-time faculty and the adjuncts. The Clinical Coordinator also began to print out a specific list created from the syllabus of required items they can help the student seek out. We have also grown our preceptor pool to allow the students even more time with a MTC preceptor trained technologist versus traveling technologists.

**Re-evaluation Date:** Summer 2026.

#### **Goal #4: Be professionally minded and value life-long learning.**

<b>Student Learning Outcomes</b>	<b>Measurement Tools</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Actual Data Results</b>	<b>Past 3 – 5 years of Data Results</b>
4.1.1. Completion of modules in HIPAA, Bloodborne, Pathogens, and Covid	Clinical Setting RAD 153 F.	Semester 2	80% of the students will complete the three required quizzes on D2L and show proof of completion by submission of certificates.	4.1.1 Met	2024- 94% N=17/18 2023-100% N=10/10 2022-100% N=16/16 2021- 100% N=15/15
4.1.2. Possess the knowledge of positioning skills, technical factor solutions, and utilize of radiation protection to	Clinical Setting RAD 165 S.	Semester 4	85% of students will score an average of 2.5 out of 3 on the image presentation form section, "Quality	4.1.2 Not Met New measurement in 2024	2024- 50% N=8/16 2023- 100% N=14/14 2022-100% N=10/10

be clinically competent as an entry-level radiographer.			of Image and Technical Factors.”		
4.1.3. Demonstration of a positive level of engagement during registry review	Academic RAD 220 M.	Semester 6	80% of the students will complete of 80% of Corectec online review assignments	4.1.3 Met	2024-93% N=13/14 2023-100% N=14/14 2022-100% N=12/12
<b>Life-Long Learning</b>					
4.2.1. Understanding of the necessity for ARRT certification and maintaining CE credits.	Student Academic Class. RAD 101 F.	Semester 2	90% Students will develop a chart for reference on all organizations who require and provide continuing education credits and CQR 2011.	4.2.1 F Met	2024-100% N=22/22 2023-83% N=15/18 2022-100% N=17/17 2021-100% N=16/16
4.2.2. Demonstrate an understanding and value of life-long learning and professional development activities	RAD 268 S	Semester 6	85% of the students will attend 8 hours of validated professional development (continuing education) seminars during their final semester	4.2.2 S Not Met	2024-71.4% N=10/14 2023-88.9% N=8/9 2022-75% N=9/12 2021- Covid event 2020- Covid Event  2019-100% N=11/11
<b>Analysis:</b> 5 different outcomes are used on this goal. 2 of the 5 were not met, leaving us at 60% meeting the outcomes. Since the covid pandemic we have not been able to have 100% participation in the annual meeting attendance with the students. More of our students have small children or are a single parent. This creates a problem for them to attend the conference. The attendance over the last 3 years has been consistent. Regarding 4.1.2 the 50% drop on determining the quality of the image. This concept was very difficult for this group to grasp.					

**Action Plan based on Analysis:** 4.1.2 objective with the 50% scoring had the instructor going back and to review the concepts of determining the quality of an image a few times. The positioning faculty also spent more time discussing the quality of an image too. This seemed to finally make it “click” for those students having difficulty. We continue to elect officers of the RAD Tech Club at the beginning of the 5th semester. This allows them 2 semesters to fund raise for the spring annual conference. We look forward to our number of students attending this conference to increase as the successes of the past students in the competitions has sparked competitiveness amongst the groups.

**Results/Improvements noted based on action plans implemented:** The officers of this current year for the RAD Tech Club are well on their way of another year of successful fund raising! The faculty will continue to guide them and keep them on task for the fundraisers and competitions held at the conference.

**Re-evaluation Date:** Summer 2026.