

## Outcomes Assessment Plan - Fall 2020

Goal 1: Students will demonstrate CLINICAL COMPETENCE					
Student Learning Outcomes	Assessment Tool	Timeframe	Benchmark	Fall 2020	Spring 2020
1.1: Student will apply positioning skills	1.1.1. DMI 51A Lab, final positioning practical, section 5	2 <sup>nd</sup> Semester (formative)	Average score $\geq 90\%$	<b>94.4% (12)</b>	<b>88.89% (15)</b>
	1.1.2. DMI 68, Student Clinical Evaluation, section 2.2	Final Semester (summative)	Average score $\geq 2.7$ on 3-point scale	<b>2.89 (9)</b>	<b>2.5 (10)</b>
1.2: Students will practice radiation protection	1.2.1: DMI 51A Lab, final positioning practical, section 9	2 <sup>nd</sup> Semester (formative)	Average score $\geq 90\%$	<b>91.7% (12)</b>	<b>90% (15)</b>
	1.2.2: DMI 68, Student Clinical Evaluation, section 5	Final Semester (summative)	Average score $\geq 2.7$ on 3-point scale	<b>2.96 (9)</b>	<b>2.87 (10)</b>

## Analysis

**1.1.1:** Benchmark met. There was a 6% increase in scores from Spring 2020 to Fall 2020. This is due to how COVID affected when students took practicals. In Spring 2020, the students were unable to have a final practical exam; thus, the scores presented in Spring 2020 are not a true reflection of standard practice. The Spring 2020 SLO data is from the first positioning practical. In Fall 2020, the students took two practicals instead of three, and SLO data was used from the 2<sup>nd</sup> practical. Student learning was improved by students having more than one positioning practical. Students achieved program-level SLOs by demonstrating proper positioning techniques during their practical exams.

**1.1.2:** Benchmark met. There was a 15.6% increase in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by demonstrating proper positioning techniques with their patients.

**1.2.1:** Benchmark met. There was a 1.7% increase in scores from Spring 2020 to Fall 2020. This is due to how COVID affected when students took practicals. In Spring 2020, the students were unable to have a final practical exam; thus, the scores presented in Spring 2020 are not a true reflection of standard practice. The Spring 2020 SLO data is from the first positioning practical. In Fall 2020, the students took two practicals instead of three, and SLO data was used from the 2<sup>nd</sup> practical. Student learning was improved by students having more than one positioning practical. Students achieved program-level SLOs by demonstrating proper radiation protection techniques during their practical exams.

**1.2.2:** Benchmark met. There was a 3.1% increase in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by demonstrating proper radiation protection techniques with their patients.

## Action Plan

**1.1.1:** We will continue to gather data and monitor this trend.

**1.1.2:** We will continue to gather data and monitor this trend.

**1.2.1:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new formative analysis of radiation protection.

**1.2.2:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of radiation protection.

## **Re-Evaluation Date**

At the conclusion of Spring 2021

<b>Goal 2: Students will demonstrate CRITICAL THINKING</b>					
<b>Student Learning Outcomes</b>	<b>Assessment Tool</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Fall 2020</b>	<b>Spring 2020</b>
2.1: Students will analyze radiographic images	2.1.1: DMI 51B, final exam, image critique questions	2 <sup>nd</sup> Semester (formative)	Average score ≥90%	<b>83.25% (9)</b>	<b>83.25 (15)</b>
	2.1.2: DMI 68, Student Clinical Evaluation, section 2.7	Final Semester (summative)	Average score ≥2.7 on 3-point scale	<b>2.87 (9)</b>	<b>2.7 (10)</b>
2.2: Students will manipulate technical factors	2.2.1: DMI 50A, written lab, Three-Dimensional Thinking – Part Two	1 <sup>st</sup> Semester (formative)	Average score ≥90%	<b>100% (13)</b>	<b>100% (15)</b>
	2.1.2: DMI 68, Student Clinical Evaluation, section 2.3	Final Semester (summative)	Average score ≥2.7 on 3-point scale	<b>2.89 (9)</b>	<b>2.7 (10)</b>

## Analysis

**2.1.1:** Benchmark not met. The final exam for this class encompasses cumulative knowledge about image critique. Historically, this has been a tough exam for students, but the grades have been consistent from one semester to the next. Even the cohort disrupted by COVID (Spring 2020) had scores consistent with past semesters.

**2.1.2:** Benchmark met. There was a 6.3% increase in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by analyzing radiographic images they took.

**2.2.1:** Benchmark met. Students manipulated technique to visualize all aspect of the box and determine what was inside. A new box was created and within it, new artifacts were tapped in the inside of the box. Students had to both manipulate the box and the technical factors to visualize what was inside. Student learning was maintained by using the same lab template as Spring 2020 but with modifications to objects within the box. Students achieved program-level SLOs by interpreting how different techniques allow the visualization of objects with different densities.

**2.2.2:** Benchmark met. There was a 7% increase in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by justifying which manual technique to use on a given patient and exam.

## Action Plan

**2.1.1:** The instructor of this course was brought in to discuss an action plan that identifies the missed benchmark. We discussed analyzing individual exam questions to see if any questions had a discrimination index that was statistically significant. If a question was found to be of statistical significance, the instructor can spend more time discussing that topic. We also discussed reducing the benchmark to 85%. A 90% benchmark might not be reasonably achievable.

**2.1.2:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of image analysis.

**2.2.1:** Upon further investigation, the Fall 2020 grade is 100% because it is a completion grade and not a true test of the student's ability to manipulate technical factors. The instructor will use the same lab but develop an assessment tool to properly measure the student's ability to manipulate technical factors. We will continue to gather data and monitor this trend.

**2.2.2:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of image analysis.

## **Re-Evaluation Date**

At the conclusion of Spring 2021

<b>Goal 3: Students will demonstrate an understanding of PROFESSIONALISM</b>					
<b>Student Learning Outcomes</b>	<b>Assessment Tool</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Fall 2020</b>	<b>Spring 2020</b>
3.1: Students will demonstrate professional ethics	3.1.1: DMI 52: ethics exam	2 <sup>nd</sup> Semester (formative)	Average score ≥90%	<b>97% (10)</b>	<b>90% (15)</b>
	3.1.2: DMI 68, Student Clinical Evaluation, section 3	Final Semester (summative)	Average score ≥2.7 on 3-point scale	<b>2.92 (9)</b>	<b>2.9 (10)</b>
3.2: Students will demonstrate an appreciation for radiologic sciences	3.2.1: Number of current students who initiate advanced CT modality certification	Final Semester (summative)	60% of students will begin CT certification	<b>no data</b>	<b>no data</b>
	3.2.2: Number of current students who are members of a professional radiologic society	All students	25% of students will be members	<b>25.6% (39*)</b>	<b>47.9% (48*)</b>

\*number of students whom replied

## Analysis

**3.1.1:** Benchmark met. There was a 7% increase in scores from Spring 2020 to Fall 2020. Student learning was improved by the implementation of a new ethics exam. In Spring 2020, only a handful of questions from an exam were used to measure this SLO. In Fall 2020, an entire ethics exam was developed to test this SLO. Students achieved program-level SLOs because the instructor developed new tools for online instructor that better facilitated conversations about ethical behavior.

**3.1.2:** Benchmark met. There was a 0.6% increase in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by using ethical considerations when handling their patients.

**3.2.1:** Benchmark not analyzed.

**3.2.2:** Benchmark met. There was a 87% decrease in scores from Spring 2020 to Fall 2020. Students learn about these societies in the introductory course DMI 49. Historically, these societies were discussed with student further in the 2<sup>nd</sup> semester DMI 51A course. The current instructor of that course did not discuss the societies; however, a greater emphasis on the importance of those societies will be discussed in the first two semesters.

## Action Plan

**3.1.1:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of image analysis.

**3.1.2:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of image analysis.

**3.2.1:** The CT Pathway program has stalled in development. To take it's place, the Assessment Committee would like to develop a mentorship program. The committee would analyze how many students volunteer to be a mentor to younger students.

**3.2.2:** The instructor of DMI 51A will discuss the benefits of radiographic societies and encourage students to join.

## Re-Evaluation Date

At the conclusion of Spring 2021



**Goal 4: Students will demonstrate effective COMMUNICATION skills in the medical environment**

<b>Student Learning Outcomes</b>	<b>Assessment Tool</b>	<b>Timeframe</b>	<b>Benchmark</b>	<b>Fall 2020</b>	<b>Spring 2020</b>
4.1: Students will demonstrate oral communication skills	4.1.1: DMI 51A Lab, final positioning practical, section 1	2 <sup>nd</sup> Semester (formative)	Average score ≥90%	<b>100% (12)</b>	<b>90% (15)</b>
	4.1.2: DMI 68, Student Clinical Evaluation, section 1.1, 1.2, and 1.3	Final Semester (summative)	Average score ≥2.7 on 3-point scale	<b>2.85 (9)</b>	<b>2.87 (10)</b>
4.2: Students will practice written communication skills	4.2.1: DMI 50A, Research paper	1 <sup>st</sup> Semester (formative)	Average score ≥90%	<b>87% (13)</b>	<b>76.67% (15)</b>
	4.2.2: DMI 66, Research paper	Final Semester (summative)	Average score ≥90%	<b>No data</b>	<b>93% (10)</b>

## Analysis

**4.1.1:** Benchmark met. There was a 10% increase in scores from Spring 2020 to Fall 2020. This is due to how COVID affected when students took practicals. In Spring 2020, the students were unable to have a final practical exam; thus, the scores presented in Spring 2020 are not a true reflection of standard practice. The Spring 2020 SLO data is from the first positioning practical. In Fall 2020, the students took two practicals instead of three, and SLO data was used from the 2<sup>nd</sup> practical. Student learning was improved by students having more than one positioning practical. Students achieved program-level SLOs by demonstrating proper oral communication skills during their practical exams.

**4.1.2:** Benchmark met. There was a 0.7% decrease in scores from Spring 2020 to Fall 2020. In Spring 2020, the SLO data was gathered from the midterm evaluation and not the final evaluation; the final evaluation could not be conducted due to restrictions caused by COVID. At the time of the Spring 2020 midterm, students were concerned about the newly developing COVID pandemic. Student learning was improved as students developed skills to perform exams successfully during a pandemic. Students achieved program-level SLOs by demonstrating proper oral communication skills when speaking with patients.

**4.2.1:** Benchmark met. A new research paper was implemented Fall 2020. The rubric addressed many inconsistencies from the previous paper in Spring 2020. A librarian was brought in to help the students learn how to perform research and use citations in the paper.

**4.2.2:** Benchmark not analyzed. The students did not write a research paper Fall 2020.

## Action Plan

**4.1.1:** The instructor spent a significant amount of time with the students and having them practice proper communication. This additional time appears to have improved communication skills. We will continue to gather data and monitor this trend.

**4.1.2:** We will continue to gather data and monitor this trend. If it continues to stay above benchmarks, then the Assessment Committee will find a new summative analysis of oral communication skills.

**4.2.1:** Although the benchmark was not met, there was an increase in scores. We also discussed reducing the benchmark to 85%. A 90% benchmark might not be reasonably achievable for the first research paper. We will continue to gather data and monitor this trend.

**4.2.2:** A new research project is in development but was not ready to give to students in Fall 2020. This new research paper will be similar to the research paper given in DMI 50A and DMI 50B. With all three research papers having consistent requirements, we hope to get a good measure of written communication skills.

## Re-Evaluation Date

At the conclusion of Spring 2021