Indiana University-Indianapolis Diagnostic Sonography Program

Program Student Learning Outcomes
Abdominal Sonography-Extended Concentration

Academic Years in this Report: 2021, 2022, 2023, 2024, 2025, 2026

Date of Report Completion: October 2022, March 2023, October 2023, March 2024, October 2024, March 2025, October 2025, March 2026, October 2026

Grey Highlight = March Assessment Yellow Highlight= October Assessment

Goal #1: Graduates will demonstrate clinical competency.

Outcome	Course	Assessment Tool	Benchmark	Results
Students will effectively perform diagnostic ultrasound procedures. (Psychomotor)	*RADI-S 453 Medical Sonography Clinical Practicum III (2nd year FA) *Course RADI-R 484 Clinical Practicum DMS III for Class of '23 and previous	Q16 of clinical eval "Overall Clinical Competence and Performance Evaluation Criterion"	Minimum class average score of 3.5 out of 4.0	4.0 (Class '21) 4.0 (Class '22) 3.44 (Class '23) 3.94 (Class of '24) 4.0 (Class of '25)
Analysis and Action Plan Class '21: New program outcome. Benchmark is equivalent to a B, which we felt was a good starting point. We will review class of '22 results to determine if results are still within the benchmark. We will consider changing the benchmark next year. Class '22: Results are at the highest evaluation level. This is a very talented cohort of students. We will keep the benchmark but will look at next year's results to determine if the 4.0 score is due to grade inflation from clinical site or if it's from student talent. Class '23: One student was evaluated twice during the semester. Both evaluations scored the student at 2/4 points for this question, bringing the overall results lower than the benchmark. Considering the previous 2 years was above the benchmark, we will continue to monitor the benchmark for appropriateness. Class '24: This result is back within the benchmark range. We expected the benchmark to go back up since this cohort of students was a talented student pool. We will continue to monitor this benchmark next year. Class '25: Results are at the highest evaluation score. We expected this cohort to score very high because of the talent of these students. We will continue to monitor this benchmark next year since we will have predominantly non-radiography background students We don't know how this will affect our benchmarks.				
Students will demonstrate appropriate knowledge of ultrasound procedures (Cognitive)	*RADI-S 420 Medical Sonography Procedures (1st year FA) *Course RADI-R 351 Ultrasound Principles I for Class of '23 and previous	Average score of all tests	Minimum class average of 88% (starting Class '27) Minimum class average of 85% (Class '21- Class '26)	92.2% (Class '21) 95.4% (Class '22) 99.5% (Class '23) 90.5% (Class '24) 96.0 % (Class '25) 94.21% (Class '26)
Analysis and Action Plan Class '21: New program outcome. Benchmark reflects all tests which covers all material specific to procedures taught for that course. We will review class of '22 results to determine if this benchmark still reflects the outcome. Class '22: Results increased from last year. This cohort had a new instructor for this course. A weekly review of the material was added before students started scanning in the lab. Instructor also increased the number of tests, so students were tested over less material per test. Class '23: Results increased from last year. Since this student cohort is very talented, we will look at next year's benchmark to determine if there is a recurring trend of results. Class '24: Results decreased from last year. There are only 4 students in this cohort, therefore scores may be affected by the smaller student count. We will continue to monitor the benchmark. Class '25: Results increased from last year. Although there are only 4 students in this cohort, they all do well academically. Therefore, we expected this benchmark to rise this year. We will continue to monitor this benchmark because we will have predominantly non-radiography background students next year. We don't know how this will affect our benchmarks. Class '26: This is the first year we had predominantly non-radiography background students. The result is lower than last year, yet it is well within the benchmark. We will continue to monitor if having a cohort that is predominantly non-radiography changes the overall test scores. **ACTION PLAN:** We are increasing the benchmark to 88%, which is the low end of the B grade range.				

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Goal #2: Graduates will demonstrate effective communication skills.

Outcome	Course	Assessment Tool	Benchmark	Results
Students will use effective oral communication skills with patients and clinical staff. (Affective)	*RADI-S 452 Medical Sonography Clinical Practicum II (1st year SP) *Course RADI-R 382 Clinical Practicum DMS II for Class of '23 and previous	Average score from Ultrasound Clinical Eval Q7 "Interpersonal Skills with Patients" and Q8 "Interpersonal Skills with Staff/Other Medical Personnel"	Minimum class average score of 3.5 out of 4.0	4.0 (Class '21) 3.75 (Class '22) 3.97 (Class '23) 3.92 (Class '24) 3.97 (Class '25) 3.94 (Class '26)
Analysis and Action Plan Class'21: These skills were evaluated as one question in the clinical evaluation. We believe this does not reflect each of these as separate communication skills. We will separate this criterion into 2 criteria for '22. The benchmark reflects a B score, which we felt was a good starting point. Class '22: The criteria were separated in the clinical evaluation to better reflect these as separate communication skills. The class average was lower, but we will review that results next year to determine if this a reflection of the different student cohort or if it is from the criterion being separate questions within the evaluation. Class '23: Results increased from last year. Since this student cohort is very talented, we will look at next year's benchmark to determine if there is a recurring trend of results. Class '24: Results are similar to last year. The benchmark of 3.5 seems to be appropriate based on the last few years of data. We will continue to monitor for any significant deviations. Class '25: Results are similar to last year. The benchmark of 3.5 seems to be appropriate based on the last few years of data. We will continue to monitor for any significant deviations. Class '26:Results are similar to last year. We instituted multiple patient care and team interaction role modelling assignments for the class of '27. We will evaluate if these assignments whave any effect on this result.				
Students will demonstrate effective written communication skills (Cognitive)	*RADI-S 410 Sonography Orientation (1st year SU) * Course RADI-R 360 Introduction to DMS Projects for Class of '23 and previous	I Ought to Research That! Assignment	Minimum class average score of 22 out of 25 points	N/A (Class '21) 24.5 (Class '22) 24.7 (Class '23) 24.9 (Class '24) 24.0 (Class '25) 23.4 (Class 26) 24.4 (Class '27)
Analysis and Action Plan Class '21: This assignment was not instituted in 2021. The outcome could not be assessed because there was no written assessment tool available. Will institute a written assignment to assess students' ability to demonstrate effective written communication skills. Class '22: New program assessment tool. We chose this benchmark as it reflected a B grade, which we felt was a good starting. We will continue to monitor the results to determine if 24.5 was due to student talent or if this average grade is typical for this assignment. Class '23: There were 8 students in this cohort compared to 4 students in Class '22 cohort. Since the average is approximately the same as last year, we believe this benchmark should be readily achievable. However, we will continue to monitor the results for consistency as the class of '23 generally earned higher grades throughout the program. Class'24: This cohort scored higher than typical for this benchmark. With 3 years of data and the benchmark readily achievable, we will monitor whether the benchmark should be raised in the future. Class '25. Results are slightly lower than last year, but still an A grade average. We determined to keep the benchmark at 22/25 unless additional data reflects the need for a change to the benchmark. Class '26: Results are slightly lower than last year, but still within the benchmark. We had 13 students take this class vs 5 students the year before. The increase in the number of students may or may not have had an impact on the score results. We had one student that scored substantially lower than most, which effected the overall class average. Class '27: Results are a little higher than last year. We will continue to monitor this benchmark.				

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Goal #3: Graduates will think critically and apply problem solving skills in a scanning environment.

Outcome	Course	Assessment Tool	Benchmark	Results
Students will think critically, and problem solve imaging strategies to obtain high quality images. (Psychomotor)	*RADI-S 432 Medical Sonography Lab (1st year SP) *Course RADI-R 363 DMS Lab II for Class of '23 and previous	Right Upper Quadrant Skills Assessment	Class average score of 90%	93.2% (Class '21) 92.6% (Class '22) 97.7% (Class '23) 96.0% (Class '24) 97.9% (Class '25) 96.2% (Class '26)

Analysis and Action Plan

Class '21: We started with a benchmark of a 90% class average score as it represents a B grade. One out of five students fell below the benchmark. The grading scale was out of 10 points even though the total number of points for the assessment was 222. If the score was between certain number of points, the student was given a corresponding score based out of 10 points. This was too confusing for lab evaluators, so we will change the scoring to be number scored divided by the total possible points. We went back to the evaluations and recalculated the students score based on number scored divided by total possible points to determine average percent score. We will continue to monitor results to determine if this benchmark reflects typical student scores.
Class '22: The same assessment evaluation was used as 2021; however, the scoring system was changed to reflect the number scored divided by the total possible points. This scoring system was much easier for lab evaluators and better reflected the students true score for the assessment. 2 of the 4 students in this cohort scored just below the benchmark.
Class '23: The results went up by nearly 5%. Since this student cohort is very talented, we will look at next year's benchmark to determine if there is a recurring trend of results.
Class '24: The results are slightly lower than last year; however, it is still an A grade average. We will continue to monitor the benchmark to gather more data since the new scoring system was instituted 2022.
Class '25: The results are higher than last year. This cohort had strong scanning skills, which could justify the increase in scores.
Class '26: The results are lower than last year but still well within the benchmark. We will continue to monitor this benchmark.

Students will evaluate images for differential diagnoses. (Cognitive)	*Starting Class of '25 RADI-S 432 Medical Sonography Lab II (1st year SP) *Previously RADI-S 431 Medical Sonography Lab I (1st year FA) *Course RADI-R 362 DMS Lab I for Class of '23 and previous	Anatomy/Pathology In-Class Assignments	Minimum class average score of 90% for all Anatomy/Pathology assignments.	N/A% (Class '21) 100% (Class '22) 100% (Class '23) 100% (Class '24) 97.7% (Class '25) 95.5% (Class '26)

Analysis and Action Plan

Class '21: These assignments were in-class assignments that were not scored. After analysis of this no-grade assignment, we determined the students' time and effort on these assignments were significant enough to warrant a grade. We will implement a grade for each of these assignments for 2022.
Class '22: We added a scoring system for this assignment based on effort and completion as this is group activity. Each assignment score is based out of 20 possible points.
Class '23: These assignments were graded on effort for completing the assignment rather than percent of correct answers.
Class '24: These assignments were graded on effort for completing the assignment rather than percent of correct answers. These assignments will be changed to better align with a cognitive domain outcome and will be scored based on percent of correct answers.
Class '25: Data not available October 2024 assessment meeting. The faculty decided to move this assignment to the spring semester. Rational: Fall semester lab assignments will be more focused on image optimization to coincide with the Physical Principles course. Spring semester will be more focused on pathology coinciding with students having more clinical experience. Additionally, these assignments will be graded for correctness rather than effort.
Class '25 Update: The assignments were completely updated and did not include any content from previous years. This is also the first year these assignments were graded for correctness rather than for effort. We will continue to monitor the benchmark.
Class '26: Results were lower than last year. This is the second year for the new assignment structure. 2 students had significantly lower scores than the other students, which affected the overall average. Although the results are lower, they are still within the benchmark and we will continue to monitor.

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Goal #4: Graduates will demonstrate professional values.

Outcome	Course	Assessment Tool	Benchmark	Results
Students will demonstrate appropriate professional values in the clinical setting. (Affective)	*RADI-S 451 Medical Sonography Clinical Practicum I (1st year FA) *Course RADI-R 381 Clinical Practicum I for Class of '23 and previous	Average score from Ultrasound Clinical Eval Q3 "Student works as a Team Member" and Q4 "Student is Respectful and Considerate"	Minimum class average score of 3.5 out of 4	3.7 (Class '21) 3.95 (Class '22) 4.0 (Class '23) 3.91 Class '24) 4.0 (Class '25) 3.92 (Class '26)

Analysis and Action Plan

Class '21: We started with a benchmark of 3.5 as this is a B grade. The evaluation questions are question 11 and question 16 in this cohort's evaluation. The evaluation will be revised to better clarify the criterion and to modify or add questions to reflect clinical skills.
Class '22: The evaluation has been changed. The questions are now questions 3 and 4 on the current evaluation. The score has increased from last year. We will monitor whether this is due to the student talent or from better clarification of the criterion.
Class '23: The results have increased slightly from last year. We believe this benchmark should be readily achievable. We will continue to monitor the results for consistency throughout the upcoming cohorts.
Class '24: Results are slightly lower than last year, but overall, very high. We will continue to monitor benchmark.
Class '25: Results are increased from last year. This cohort is highly motivated to do well, so these results are not surprising. We will continue to monitor this benchmark because we will have predominantly non-radiography background students next year. We don't know how this will affect our benchmarks.
Class '26: Results were slightly lower but still consistent with other years. So far, having a predominantly non-radiography background cohort of students has not significantly decreased the results. We will continue to monitor the results and benchmark.

Students will demonstrate an understanding of ethical obligations as described in the ARDMS Code of Ethics and Scope of Practice. (Cognitive)	*RADI-S 410 Sonography Orientation (1st year SU) *Course RADI-R 360 Introduction to DMS Projects for Class of '23 and previous	Scope of Practice, Clinical Standards, and Code of Ethics Assignment	Minimum class average of 22 out of 25 points	N/A (Class '21) 23.75 (Class '22) 24.4 (Class '23) 23.75 (Class '24) 24.25 (Class '25) 24.00 (Class '26) 23.70 (Class '27)

Analysis and Action Plan

Class '21: There was no outcome that addressed the students' cognitive ability to understand their obligations to the Code of Ethics or Scope of Practice. As a new Program Director, I will add an outcome and institute an assignment to assess this skill.
Class '22: This outcome was added, and an assignment created in R360 to specifically address the Code of Ethics and Scope of Practice NEC curriculum guidelines. We chose a benchmark of 22 as this reflects a B grade. We will continue to monitor this new outcome and benchmark for any possible modifications.
Class '23: Since the average is slightly higher than last year, we believe this benchmark should be readily achievable. However, we will continue to monitor the results for consistency as the class of '23 generally earned higher grades throughout the program.
Class '24: The benchmark seems to be consistent for the last 3 cohorts. Will continue to monitor the benchmark.
Class '25: The class average is slightly higher than last year. Will continue to monitor the benchmark.
Class '26: The results are similar to last year. We had 13 students take this class vs 5 students the year before. The increase in the number of students may or may not have had an impact on the score results. We had one student that scored substantially lower than most, which effected the overall class average
Class '27: Results are similar to all previous years. We will continue to monitor the benchmark.

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Goal #5: Graduates will have the knowledge of professional development opportunities.

Outcome	Course	Assessment Tool	Benchmark	Results
Students will demonstrate knowledge of professional development resources. (Cognitive)	*RADI-S 410 Sonography Orientation (1st year SU) *Course RADI-R 360 Introduction to DMS Projects for Class of '23 and previous	Professional Development Resource Scavenger Hunt Assignment	Minimum class average score of 90%	N/A (Class '21) 92% (Class '22) 100% (Class '23) 100% (Class '24) 100% (Class '25) 96% (Class '26) 100% (Class '27)

Analysis and Action Plan

Class '21: There was no outcome that addressed the students' cognitive ability to understand resources available for professional development. As a new Program Director, I will add an outcome and institute an assignment to assess this skill.

Class '22: This outcome was added, and an assignment created in R360 to specifically address the professional development resources NEC and Accreditation curriculum guidelines. We chose a benchmark of 90% as this reflects a B grade. We will continue to monitor this new outcome and benchmark for any possible modifications.

Class '23: There were 8 students in this cohort compared to 4 students in Class '22 cohort. Since the average is higher than last year, we believe this benchmark should be readily achievable. However, we will continue to monitor the results for consistency as the class of '23 generally earned higher grades throughout the program.

Class '24: Results stayed consistent with last year's cohort. Since class of '22 was close to the benchmark, we will continue to monitor for the next few years.

Class '25: Results stayed the same as last year. We will monitor for another year before deciding if the benchmark needs to be adjusted.

Class '26. Multiple students did not understand the difference between a journal and a journal article. This is possibly due to the number of students who did not go through the Radiography program prior to the Sonography Program and therefore had not been responsible for research or journal article reading.

Class '27: Results are higher than last year. We will continue to monitor this benchmark.

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Goal #6: To prepare competent entry-level sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for the Abdomen-Extended concentration.				
Outcome	**Course**	**Assessment Tool**	**Benchmark**	**Results**
Students will successfully complete the program in 18 months. (Affective)	N/A	Number of students recommended for graduation.	70% of students who entered the program will graduate on time.	100% (Class '21) 100% (Class '22) 88% (Class '23) 100% (Class 24) 100% (Class '25)
Analysis and Action Plan Class '21: The benchmark was set to reflect the accreditation standard for student retention. The program has seen historically very low rate of student drop off rates. We anticipate the student retention rate will remain high. Class '22: The student retention rate was consistent with our historical trends. We anticipate the student retention rate to remain high. Class '23: 7 of 8 students was recommended for December graduation. 1 student completed the program in February (20 months) and was recommended for May graduation. Class '24: Student retention rate was expected. Class '25: Student retention rate was as we expected. We will continue to monitor this benchmark because we will have predominantly non-radiography background students next year. We don't know how this will affect our benchmarks.				
Students will express confidence in the overall quality of skills learned while in the program. (Affective)	N/A	Post-Graduation Survey question 22 "Overall program quality and preparation as an entry-level sonography rating question"	80% of students will rate the program as Good or Excellent	100% (Class '21) 100% (Class '22) 100% (Class '23) 100% (Class '24) 100% (Class '25)
Analysis and Action Plan Class '21: We chose to include the 'Good' ranking in this benchmark since some people rarely use the highest rating on surveys. Also, this cohort had a change of Program Director in the middle of their program, therefore we weren't sure how that may have impacted students' ranking of the program. We will monitor this benchmark to determine if we should keep or discontinue using the 'Good' ranking. Class '22: This was the first class to start and end with the new Program Director, however many changes were made to align the program with accreditation standards during their time in the program. We were unsure how this would affect the overall ranking of the program. Class '23: 1 student rated the program as good, but she rated almost all questions as good. The rest of the students rated the program as excellent. We will continue to monitor the benchmark. Class '24: 1 student rated the program as good, but she rated almost all questions as good. The rest of the students rated the program as excellent. We will continue to monitor the benchmark. Class '25: All students rated the program as excellent. We will continue to monitor the benchmark.				