Oregon Institute of Technology Medical Imaging Technology Department
Diagnostic Medical Sonography Degree Completion Program Annual Assessment
Report
2015-16

I. Introduction

The Oregon Tech Diagnostic Medical Sonography degree completion program enables registered professionals in Diagnostic Medical Sonography to further their knowledge and skills necessary for career advancement, to become effective communicators, problem solvers, critical thinkers, responsible managers and leaders, and to value lifelong learning. The Bachelor of Science Degree Completion Program in Diagnostic Medical Sonography is delivered via distance education to Sonographers who are credentialed with American Registry for Diagnostic Medical Sonography (ARDMS). Students will complete required course work through the Oregon Institute of Technology Distance Education Department. Courses are delivered via Blackboard, which serves as a virtual learning environment. The Sonography Degree Completion program is presented by the Department of Diagnostic Medical Sonography (DMS). The DMS program is in the Department of Medical Imaging Technology (MIT). DMS and MIT are contained within the College of Health, Arts, and Sciences (HAS) at Oregon Tech.

The Diagnostic Medical Sonography Degree Completion program was implemented in fall 2011 as an online program. Students who are accepted into the Diagnostic Medical Sonography Degree Completion program are already registered Diagnostic Medical Sonographers working in the field who have passed their national registry exam in Diagnostic Medical Sonography. The distance delivery version began in 2011 and will expect to grow over time. The on campus Diagnostic Medical Sonography Program (DMS) began in 1997 and is one of the five Medical Imaging programs offered on the Klamath Falls campus.

II. Program Purpose, Objectives and Student Learning Outcomes

The Diagnostic Medical Sonography faculty reviewed the program purpose, objectives, and learning outcomes during the Fall Faculty meeting in September 2015. The faculty reaffirmed the purpose and aligned the Programmatic Student Learning Outcomes assessments with Institutional Student Learning Outcomes.

Diagnostic Medical Sonography Program Purpose
The purpose of the Diagnostic Medical Sonography Degree Completion Program is to provide ARDMS registered Sonographers a Bachelor of Science degree from a distance education program that furthers the student's knowledge, clinical practice, and performance of examinations while practicing competent patient care and safety in the advanced modalities of Diagnostic Medical Sonography.

Program Educational Objectives
The program prepares students to:
1. Employ diagnostic sonographic imaging techniques, critical thinking skills, effective communication skills, and professional judgment.

2. Effectively apply ergonomically correct scanning techniques.
 3. Successfully complete nationally recognized credential examinations.
4. Develop a dedication to independent life-long learning and professional contribution.
5. Utilize diagnostic techniques, sound judgment and good decision making to provide patient services.
6.   Be leaders in the field of Diagnostic Medical Sonographers who contribute to the field on a local, regional or national level.
7. Think critically, communicate effectively and exemplify professional ethics.
8. Become lifelong learners and responsible citizens.

Expected Program Learning Outcomes
Graduates from this program will be able to demonstrate:

1. Effective oral, visual, and written communication skills.
2. The ability to work effectively in teams.
3. The ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines
4. Knowledge and understanding of human gross and sectional anatomy relative to normal and abnormal sonographic imaging.
5. Knowledge and understanding of human physiology, pathology and pathophysiology.
6. Knowledge and understanding of ultrasound physical principles and instrumentation.
7. Knowledge of sonographic biological effects, proper application of sonographic instrumentation relative to imaging and image quality.
8. Appropriate ergonomic scanning applications.
9. An understanding of diverse cultural and humanistic traditions in the global society.

Other Learning Opportunities
1. Annual professional meetings and conferences for sonography students include:
- Society of Diagnostic Medical Sonography (SDMS)
- American Institute of Ultrasound in Medicine (AIUM)
- American College of Educators in Radiologic Technology (ACERT)
- Eugene Ultrasound Society (EUS)
- Other smaller study groups located in San Francisco Bay Area
- Oregon Tech DMS Sonography Advisory Council annual meeting and Continuing Medical Education opportunity (CME)

The location and financial responsibility remain a challenge for DMS students to attend national conferences. These meetings are held during regularly scheduled instructional terms. Students appreciate the networking and educational benefits of attending these meetings. Competition opportunities are components of the national conferences of SDMS and ACERT. Presently, international trips are unavailable to DMS students.

2. On-line professional learning opportunities for sonography students include:
- Monthly CME directed readings associated with student SDMS Memberships
- SDMS Webinars are available to students with SDMS Membership

All DMS students hold student SDMS memberships and are eligible for these opportunities. The DMS faculty encourages students to participate in these offerings not only for educational benefits, but to develop and promote effective life-long learning behaviors.

III. Three-Year Cycle for Assessment of Student Learning Outcomes

The following are the nine main outcomes which will be assessed at a rate of three per year on a three-year cycle, as listed below in Table 1.

Table 1: Student Learning Outcomes Assessment Schedule	2014-2015	2015-2016	2016-2017
1. The student will demonstrate effective oral, visual, and written communication skills			**DMS 343**
2. The student will demonstrate the ability to work effectively in teams		**DMS 370**	
3. A. The student will demonstrate an ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines		**DMS 335**	
B. Professionalism		**DMS 430**	
4. The student will demonstrate knowledge and understanding of human gross and sectional anatomy relative to normal and abnormal sono-graphic imaging.	**DMS 365**		
5. The student will demonstrate knowledge and understanding of human physiology, pathology and pathophysiology.			**DMS 430**
6. The student will demonstrate knowledge and understanding of ultrasound physical principles and instrumentation.			
7. The student will demonstrate knowledge of sonographic biological effects, proper application of sonographic instrumentation relative to imaging and image quality.	**DMS 365**		

8.	The student will demonstrate appropriate ergonomic scanning applications.			**DMS 353**
9.	The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.		**DMS 430**	

Table 2. Diagnostic Medical Sonography Assessment Cycle

IV. Summary of 2014-15 Assessment Activities

The Diagnostic Medical Sonography faculty conducted formal assessment of three programmatic student learning outcomes (PSLO's) during the 2015-16 academic year. Table 3 summarizes the 2015-16 assessment activities. The Curriculum Map located in the Appendix indicates the courses where teaching and/or learning occurs and the level to which this PSLO is taught in the program.

Table 2: Summary of 2015-2016 Assessment Activities	
Student Learning Outcome	*Assessment Method*
PLSO # 2 The student will demonstrate the ability to work effectively in teams	<u>Direct Assessment</u> Group Project <u>Indirect Assessment</u> DMS Survey
PLSO #3A The student will demonstrate an ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines	<u>Direct Assessment</u> Test <u>Indirect Assessment</u> Survey

PLSO # 3B Professionalism	Direct Assessment Professional Evaluation Indirect Assessment Professional Evaluation, self

Table 3: Summary of 2015-2016 Assessment Activities

Student Learning Outcome # 2: The student will demonstrate the ability to work effectively in teams

The DMS Faculty analyzed the curriculum for outcome reflected in the curriculum. A map of these identified courses is found the Appendix A, Student Learning Outcome-Course Matrices Table A1.

Direct Assessment #1-Group Project

The faculty assessed this outcome in DMS 373 Obstetrical Sonography, 2015 by means of a group video project. The faculty rated the proficiency of 4 online students using the performance criteria described in Table 3 below.

Table 3: DMS Written Pathology Exam Assessment Table				
Performance Criteria	**Assessment Method**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Achieves goal/purpose	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Assumes roles & responsibilities	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Communicates effectively	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
Reconciles disagreements	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Shares work appropriately	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	103%
Develops strategies/actions	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Cultural adaption	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%

Table 4. Direct Assessment Results for PSLO #2 in DMS 373, Winter 2015

Students performed well in this student designed teamwork assignment, although these teams were conducted via internet communication. Despite the distance between students, members were able to work through the performance criteria and excelled in teamwork characteristics. The goal of this assessment was to determine how well the students would interact and communicate with one another. The students were scored utilizing the Oregon Tech Team and Group Work Rubric. A majority of the students were able to achieve the goals and purpose of this assessment tool. The results concluded that DMS students are able to apply group work responsibilities, while working well with others. In the future DMS will conduct these groups using random selection rather than allowing the students to form group participants.

Strengths: *Scores in all criteria exceeded the minimum acceptable proficiency.*

Weaknesses*: None identified, although did meet the bare minimum in areas such as: communicates effectively, reconciles disagreements, and shares work.*

Recommendations: *Continue effective teaching practices and may implement additional team working projects in the future.*

Indirect Assessment #1- Self Evaluation SLO #2 outcomes in DMS 373, 2015 using a rubric described in Table 4 below. There were 4 online students involved in the assessment.

Table 4: DMS Practical Assignment Table				
Performance Criteria	**Assessment Method**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Achieves goal/purpose	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Assumes roles & responsibilities	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Communicates effectively	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Reconciles disagreements	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%

Shares work appropriately	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
Develops strategies/actions	OIT Team & Group Work Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Cultural adaption	OIT Team & Group Work Rubric	OIT Team & Group Work Rubric	80% at 3 or 4	100%

Table 5. Indirect Assessment Results for PSLO #2 in DMS 373, 2015

Strengths: All students scored within range of the performance rating.

Weaknesses: No weaknesses are apparent based essay rubric results.

Recommendations: Continue effective teaching practices and may consider creating different assessment methods in the future.

The goal for this assessment was to achieve a minimum acceptable performance of 80%. This goal was met. The faculty rated the students by utilizing Oregon Tech DMS Practical Rubric. The results were encouraging to know that DMS students are preforming teamwork skills at an acceptable level of expectations. Faculty noted that the scores were similar to the scores administered by faculty. The sample size was extremely small so scores are probably inflated.

Student Learning outcome #3: A. The student will demonstrate an ability to provide basic patient care and comfort while utilizing ethical, professionalism, and HIPPA guidelines

The faculty assessed this outcome in DMS 365, Sonographic Pathology, 2015 by means of a test questions. The DMS Faculty mapped this outcome to the curriculum. A map of the identified courses is found the Appendix A. The faculty rated the proficiency of the students using the performance criteria described in Table 6

Direct Assessment #1-Test Questions
The faculty assessed this outcome in DMS 365 Fall Term 2015, by using test questions. Five content specific questions were used to evaluate patient care knowledge. Students who scored 80% correct have met our expectations for proficiency. Results are shown in Table 5.

Table 5: DMS Written Case Study Assessing Sonographic Pathology				
Performance Criteria	**Assessment Method**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
1. HIPPA	Final Exam Question, 47	% scale per # of questions	80% with 80% or higher	100%
2. Anticipate patient needs	Final Exam Question, 48	% scale per # of questions	80% with 80% or higher	100%
3. Universal precautions and Infection Control	Final Exam Question, 49	% scale per # of questions	80% with 80% or higher	100%
4. Scope of Practice	Final Exam Question, 50	% scale per # of questions	80% with 80% or higher	100%

Table 6. Results for PSLO #3 A in DMS 365, 2015

Strengths: All students earned scores above and beyond DMS faculty expectations.

Weaknesses: None

Recommendations: These are working professionals that already have the skills to provide basic patient care and comfort while utilizing ethical, professionalism, and HIPPA guidelines.

Patient care and HIPAA is a chief responsibility of the sonographer, this knowledge is significant towards passing board exams, patient safety, and other imaging modalities. There were 4 DMS students that participated in this activity. Data collection was achieved by means of test question evaluation that pertained to the performance criteria. The exam was timed 50 questions in 50 minutes. Results for the students demonstrating proficiency is concluded in the Results Column. The DMS faculty found these results to be acceptable overall. As expected, most DMS students were able to understand HIPPA, patient needs, universal precautions, infection control, and scope of practice. The DMS faculty found these results to be demonstrated above average. As predicted, DMS DE students were able to comprehend patient care principles because they are working experts already immersed in the field. There were no definite weaknesses that needed remedial action.

Indirect Assessment #2- Student Survey-SDMS Code of Ethics that followed the Oregon Tech rubric guidelines.

To accompany the assessment above, the faculty indirectly assessed this outcome in DMS 365 Sonographic Pathology, 2015 by administering a comprehensive Ethical Dilemma Assignment to 4 online students given Students were instructed to list three provisions in the SDMS Code of Ethics that followed the Oregon Tech rubric guidelines. It was the desire that students scored at least with an 80% or better. These results are summarized using the same performance criteria, shown in Table 6.

Table 6: DMS Student Survey Assessing PSLO #3 A				
Performance Criteria	**Assessment Method**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Knowledge of code	OIT Ethics Rubric	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Describes issues	OIT Ethics Rubric	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Describes parties	OIT Ethics Rubric	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Describes alternatives	OIT Ethics Rubric	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Benefits/risks of choice	OIT Ethics Rubric	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

Table 7. Direct Assessment Results for PSLO #3A in DMS 365, Fall 2015

Strengths: The students had the *ability to understand this comprehensive Ethical Dilemma Assignment*

Weaknesses: *None*

Recommendations: *Continue to have students achieve exemplary understanding of this particular ethical dilemma, in the future it may be necessary to assess additional scenarios.*

No follow up recommendations are suggested at this time because of the number of students who scored at least with an 80% or better. No follow up recommendations are suggested at this time.

Student Learning Outcome PLSO # 3 B: Professionalism

The DMS Faculty mapped this outcome to the curriculum. A map of the identified courses is found the Appendix A, Student Learning Outcome-Course Matrices Table A3.

Direct Assessment #1- DMS Professional Evaluation

Clinical site supervisors assessed this professionalism outcome in DMS Externship, 430, 2016 using our extern professional evaluation assessment tool to evaluate knowledge and understanding of medical professionalism. Students who scored 80% correct have met our expectations for proficiency. Program Faculty and Clinical Instructors scored 4 online DMS students, rating professional behaviors by using the scoring criteria utilized in DMS 430, DMS Externship 430, 2016. The student proficiency is described in Table 7.

Table 7: DMS Test Questions to Assess Knowledge and Understanding of Ultrasound Physical Principles and Instrumentation.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Properly prepares room for each study; Maintains a neat & tidy work area	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows an efficient and methodical approach while working	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Demonstrates an awareness of the daily schedule and the necessity for flexibility	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Completes expected amount of work for level of training	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows an increase in efficiency with repetition	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Seeks appropriately challenging sonographic assignments	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Exhibits accuracy and consistency in all labeling and calculations	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Exhibits accuracy and consistency in recognition of normal and abnormal anatomy	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Consistently shows proper positioning	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Accurately selects the proper instrumentation and transducer	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

Follows the departmental protocols and imaging policies; Images are diagnostic	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Displays understanding of a procedure and it's components	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Able to incorporate proper protocol variations if needed	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Able to determine appropriateness of scan pertaining to patient pathology/ ability	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Able to differentiate abnormal anatomy from normal & normal anatomy from abnormal	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Able to provide interpreting physician with accurate clinical and sonographic information including appropriate differential diagnoses	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Show appropriate behavior for a clinical work setting	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Adhere to the OIT Medical Imaging Code of Ethics; Follows ALARA principles	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Show effective communication with the Clinical	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

coordinator				
Consistently adheres to the hospital HIPAA policies/procedures	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Ensures patient safety and other stakeholder personal safety	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Demonstrates increasing levels of scanning skills and differential diagnosis by means of routine study and comprehension	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Completes all tasks	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Shows interest in continuing despite setbacks	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows appropriate judgment based on sound knowledge	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Uses available data to predict outcome; Uses time wisely	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Shows ability to troubleshoot	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Takes appropriate action, and make sound decisions in stressful situations	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows ability to prioritize	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Completes assignment in a reasonable amount of time	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Exhibits judgment and critical thinking	Faculty and Clinical Instructor	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

	Ratings			
Exhibits professional demeanor in stressful situations	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows confidence in abilities	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Ability to judge personal limitation; Seeks help when appropriate	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Exhibits clear, honest and respectful communication	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Adapts well and avoids disruption of established routines	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Honest and forthright when mistakes are made	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Resolves conflicts according to OIT/departmental protocol	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Greet patients in kind, courteous manner; Recognize anxious patients, & act accordingly	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Judge the patient's understanding, and explains procedure accordingly	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Aware of patient's safety at all times; Always tries to make the patient feel comfortable	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Respect the patient's privacy, and adhere to the HIPAA laws	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Converse with the patient about matters	Faculty and	1-4 scale, % at	80% at 3 or 4	100%

other than the procedure	Clinical Instructor Ratings	3 or 4		
Uses appropriate medical terminology/language	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Able to communicate effectively in English (verbally and in writing)	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Consistently on time	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Consistently prepared for the shift	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Attendance consistent with OIT's vacation, holiday, and sick leave policy (PTO)	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Proper request of personal time off	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Accepts and follows advice willingly	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Initiates appropriate dialogue to better understand advice given	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Demonstrates professional attitude and behaviors (verbal and non-verbal)	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Makes effort to create a positive environment	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Shows interest in participating without being told	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Actively seeks out learning experiences	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Completes homework assignments	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

Follow department protocol regarding dress code	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Wears appropriate ID	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Wears conservative jewelry	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Ear piercings limited to one post per ear	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Tattoos are appropriately covered	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Fingernails are kept clean and at appropriate length	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Maintains good personal hygiene	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Maintains appropriate grooming	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Avoids strong body fragrances	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Wears hair pulled off shoulders; appropriate hair style and color	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Uses appropriate body language	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Offer assistance to others in the department	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Involved as a team member for completion of clinical tasks	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Communicate effectively with other departments	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Demonstrate	Faculty and	1-4 scale, % at	80% at 3 or 4	100%

essential computer skills including PACS systems	Clinical Instructor Ratings	3 or 4		
Know different protocols and how/why each is used	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Understand and exhibit protocol steps and variations in each one	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Identify and understand contraindications for each procedure	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Demonstrate knowledge of appropriate patient history questions pertinent to each exam	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Properly aligns system/table/chair to self	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Properly holds the transducer	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Recognizes incorrect ergonomic postures and corrects accordingly	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	90%
Proper placement of transducer cable	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%
Aligns patient to create a suitable ergonomic scanning position	Faculty and Clinical Instructor Ratings	1-4 scale, % at 3 or 4	80% at 3 or 4	100%

Table 8. Results for PSLO #3 in DMS 430, 2016

Strengths: *All students received adequate scores to justify no immediate action.*

Weaknesses: *None*

Recommendations: None.

Student Learning Outcome #9: The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.

The DMS Faculty mapped this outcome to the curriculum. A map of the identified courses is found the Appendix A. Results are identified in Table 8.

Table 8: DMS Student Test Questions to Assess Understanding of Diverse Cultural and Humanistic Traditions in the Global Society				
Performance Criteria	**Assessment Method**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Beliefs	Written Examination	1 point each for correct problem	80 % class average	100%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Attitudes	Written Examination	1 point each for correct problem	80 % class average	90%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Behaviors	Written Examination	1 point each for correct problem	80 % class average	100%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Rituals	Written Examination	1 point each for correct problem	80 % class average	100%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Residents	Written Examination	1 point each for correct problem	80 % class average	90%

Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Organization	Written Examination	1 point each for correct problem	80 % class average	80%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Family	Written Examination	1 point each for correct problem	80 % class average	890%
Demonstrate knowledge of Diversity and Cultural Competency in Healthcare-Community	Written Examination	1 point each for correct problem	80 % class average	90%
Demonstrate knowledge of Diversity and Cultural Competency in Senior Living Communities-Cultural Awareness	Written Examination	1 point each for correct problem	80 % class average	80%
Demonstrate knowledge of Diversity and Cultural Competency in Senior Living Communities-Leadership	Written Examination	1 point each for correct problem	80 % class average	90%
Demonstrate knowledge of Diversity and Cultural Competency in Senior Living Communities-Workplace Practices	Written Examination	1 point each for correct problem	80 % class average	90%
Demonstrate knowledge of	Written Examination	1 point each for correct	80 % class average	100%

Diversity and Cultural Competency in Senior Living Communities- Training and Education		problem		
Demonstrate knowledge of Diversity and Cultural Competency in Senior Living Communities- Community Outreach	Written Examination	1 point each for correct problem	80 % class average	100%

Table 10. DMS 388 Externship Preparation SLO #9, Spring 2016

The goal was that 80% of these students would achieve an 80% or better on these exam questions. Cultural competency is at the core of high quality, patient centered care. This care ultimately determines how care is delivered and received. This test indicates that our students are somewhat culturally competent. In the future assessment in the clinical environment would be a better indicator of Cultural Competence.

Strengths*: All respondents reported agree or strongly agree that the program helped them to understand programmatic expectations.*

Weaknesses*: No weaknesses are apparent at this time.*

The main assessment method was combined average of a Professional Evaluation. It was the desire that students scored at least with an 80% or better. The outcomes exposed acceptable results with students scoring above the benchmark of 80%. No follow up recommendations are suggested at this time as the results indicated that students were able to fulfill faculty expectations in all the criteria listed. This learning outcome is an essential strength for the DMS core program requirements.

V. Summary of Student Learning

In a spring faculty meeting, the DMS faculty reviewed the assessment results and reached the following overall conclusions.

Student Learning Outcome #2:

Limited information due to low enrollment, no action needed at this time.

Student Learning Outcome #3A

Limited information due to low enrollment, no action needed at this time.

Student Learning Outcome #3 B:

Limited information due to low enrollment, no action needed at this time.

Student Learning Outcome #9

Limited information due to low enrollment, no action needed at this time

Appendix A1

Student Learning Outcome-Course Matrices

Student Learning Outcome # 2: The student will demonstrate the ability to work effectively in teams. Table A1 demonstrates the mapping of this outcome to DMS courses.

I=Introduce R=Reinforce E=Emphasize

DMS Course	Summer	Fall	Winter	Spring
Sophomore				
DMS 223 Abdominal I		I		
DMS 252 Sophomore Lab I				
DMS 224 Abdominal II			R	
DMS 253 Sophomore Lab II				
DMS 225 Abdominal III				R
DMS 254 Sophomore Lab III				
DMS 234 Pelvic Sonography				
Junior				
DMS 335 Patient Care				
DMS 352 Junior Lab I		R/E		
DMS 337 Breast Sonography				
DMS 346 MSK Sonography				
DMS 342 Survey Echo				
DMS 316 Survey of VT				
DMS 353 Junior Lab II				
DMS343 Fetal Echo & Neonatal Sono			R	
DMS 372 OB Sonography II			R	
DMS 354 Junior Lab III				
DMS 365 Sonographic Pathology				R
DMS 388 Extern Prep				
DMS 373 OB Pathology			I	
Senior				
DMS 430 I, II, III, IV Externship	R/E	R/E	R/E	R/E

Table A1. Student Learning Outcome #2-Course Matrix

Identified courses indicate that the PSLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the PSLO.

I = Introduced   R = Reinforced   E = Emphasized

Appendix A2

Student Learning Outcome-Course Matrices

Student Learning Outcome # 3A: The student will demonstrate an ability to provide basic patient care and comfort while utilizing ethical, professionalism, and HIPAA guidelines. Table A2 demonstrates the mapping of this outcome to DMS courses.

I=Introduce R=Reinforce E=Emphasize

DMS Course	Summer	Fall	Winter	Spring
Sophomore				
DMS 223 Abdominal I		I		
DMS 252 Sophomore Lab I			R	
DMS 224 Abdominal II				
DMS 253 Sophomore Lab II				
DMS 225 Abdominal III				
DMS 254 Sophomore Lab III				R/E
DMS 234 Pelvic Sonography				
Junior				
DMS 335 Patient Care		E		
DMS 352 Junior Lab I		R		
DMS 337 Breast Sonography				
DMS 346 MSK Sonography				
DMS 342 Survey Echo				
DMS 316 Survey of VT				
DMS 353 Junior Lab II			R	
DMS343 Fetal Echo & Neonatal Sono				
DMS 372 OB Sonography II				
DMS 354 Junior Lab III				R
DMS 365 Sonographic Pathology				
DMS 388 Extern Prep				
DMS 373 OB Pathology				R
Senior				
DMS 430 I, II, III, IV Externship	E	E	E	E

Table A2. Student Learning Outcome #1 -Course Matrix

Identified courses indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

        I = Introduced   R = Reinforced   E = Emphasized

Appendix A3

Student Learning Outcome-Course Matrices

Student Learning Outcome 3B: Professionalism. Table A2 demonstrates the mapping of this outcome to DMS courses.

I=Introduce R=Reinforce E=Emphasize

DMS Course	Summer	Fall	Winter	Spring
Sophomore				
DMS 223 Abdominal I		I		
DMS 252 Sophomore Lab I		I		
DMS 224 Abdominal II			R	
DMS 253 Sophomore Lab II			R	
DMS 225 Abdominal III				E
DMS 254 Sophomore Lab III				E
DMS 234 Pelvic Sonography				E
Junior				
DMS 335 Patient Care		E		
DMS 352 Junior Lab I				
DMS 337 Breast Sonography			E	
DMS 346 MSK Sonography		E		
DMS 342 Survey Echo			E	
DMS 316 Survey of VT				
DMS 353 Junior Lab II				
DMS343 Fetal Echo & Neonatal Sono				
DMS 372 OB Sonography II		E		
DMS 354 Junior Lab III				E
DMS 365 Sonographic Pathology				E
DMS 388 Extern Prep				E
DMS 373 OB Pathology				E
Senior				
DMS 430 I, II, III, IV Externship	E	E	E	E

Table A3. Student Learning Outcome #1 -Course Matrix

Identified courses indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced   R = Reinforced   E = Emphasized

Assessment time map combining Institutional Student Learning Outcomes and Programmatic Student Learning Outcomes is found in Table B1.

Table B1, three year assessment cycle for DMS PSLO.

Student Learning Outcomes Assessment Schedule	2014-2015	2015-2016	2016-2017
1. The student will demonstrate effective oral, visual, and written communication skills			**DMS 343**
2. The student will demonstrate the ability to work effectively in teams		**DMS 373**	
3. A. The student will demonstrate an ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines		**DMS 365**	
B. Professionalism		**DMS 430**	
4. The student will demonstrate knowledge and understanding of human gross and sectional anatomy relative to normal and abnormal sono-graphic imaging.	**DMS 365**		
5. The student will demonstrate knowledge and understanding of human physiology, pathology and pathophysiology.			**Spring DMS 430**
6. The student will demonstrate knowledge and understanding of ultrasound physical principles and instrumentation.	**MIT 430**		
7. The student will demonstrate knowledge of sonographic biological effects, proper application of sonographic instrumentation relative to imaging and image quality.	**DMS 353**		
8. The student will demonstrate appropriate ergonomic scanning applications.			**DMS 353**
9. The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.		**DMS 430**	

Table B1. Diagnostic Medical Sonography Assessment Cycle