Oregon TECH

Diagnostic Medical Sonography Program Assessment Report
Submission: October 31, 2019
to Office of Academic Excellence

Section 1- Program Mission and Educational Objectives

Oregon Tech Mission
Oregon Institute of Technology, an Oregon public university, offers innovative and rigorous applied degree programs in the areas of engineering, engineering technologies, health technologies, management, and the arts and sciences. To foster student and graduate success, the university provides an intimate, hands-on learning environment, focusing on application of theory to practice. Oregon Tech offers statewide educational opportunities for the emerging needs of Oregonians and provides information and technical expertise to state, national and international constituents.

Core Theme 1: Applied Degree Programs
Oregon Tech offers innovative and rigorous applied degree programs. The teaching and learning model at Oregon Tech prepares students to apply the knowledge gained in the classroom to the workplace.

Core Theme 2: Student and Graduate Success
Oregon Tech fosters student and graduate success by providing an intimate, hands-on learning environment, which focuses on application of theory to practice. The teaching and support services facilitate students' personal and academic development.

Core Theme 3: Statewide Educational Opportunities
Oregon Tech offers statewide educational opportunities for the emerging needs of Oregon's citizens. To accomplish this, Oregon Tech provides innovative and rigorous applied degree programs to students across the state of Oregon, including high-school programs, online degree programs, and partnership agreements with community colleges and universities.

Core Theme 4: Public Service
Oregon Tech will share information and technical expertise to state, national, and international constituents.

Program Alignment to Oregon Tech Mission and Core Themes
To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains

Section 1 – Program Mission

Program Mission

The mission of the Bachelor of Science in Diagnostic Medical Sonography (DMS) program at Oregon Institute of Technology to provide the residents of Oregon, the Pacific Northwest and surrounding regions with graduates possessing knowledge and behaviors to earn Bachelor of Science degrees in Diagnostic Medical Sonography, the clinical skills necessary to become competent, ethical and caring imaging professionals, and the foundation for life-long learning.

To prepare competent entry-level general sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

The mission, objectives, and student learning outcomes for the DMS program are reviewed annually by the department at the fall retreat during convocation. They are also reviewed annually by the program's Diagnostic Medical Sonography Advisory Council.

Mission Alignment

Oregon Institute of Technology's, Diagnostic Medical Sonography program serves students from the state of Oregon, as well as neighboring states. Graduates are often employed within the state of Oregon upon completion of the degree, which is also the reasoning there are the number of clinical sites within the state. Many are clinical affiliates that continue the affiliation to be able to host the students throughout the clinical externship and then employ that student upon completion of the degree. Physicians benefit as well, as Oregon Tech graduates often are gainfully employed by a medical facility in which the physician is also associated. The rigor of the Oregon Tech programs provides a high standard of training in the ultrasound professions which not only results in the graduates being highly sought after, but also patients benefit through the receipt of quality healthcare.
Oregon Institute of Technology is regionally accredited by the Northwest Commission on Colleges and Universities (NWCCU). Oregon Tech graduates have a high pass rate board certification American Registry of Diagnostic Medical Sonographers (ARDMS) board exams. Additionally, the Diagnostic Medical Imaging (DMS) program is accredited by CAAHEP (Commission on Accreditation of Allied Health Educational Programs http://www.caahep.org./.

- Students are able to join the following professional societies:
- American Registry for Diagnostic Medical Sonography (ARDMS)
- Society of Diagnostic Medical Sonography

Our DMS students are granted a yearlong externship which is all hands on. Students in which they function in the capacity of a student sonographer. They may have the opportunity to attend educational presentations, such as lectures, grand rounds and seminars, relevant to a wide array of conditions and professional development of healthcare providers. By providing such opportunities, we hope to contribute to the students' professional growth, education and competence.

The Diagnostic Medical Sonography program shares the same admission criteria including basic science curriculum during the pre-requisite year and a competitive selection process as our other ultrasound programs on campus. Students are admitted into the professional programs as sophomores and complete didactic and laboratory courses on the Oregon Tech campus. They also gain exposure to the patient care setting through clinical observations at Klamath Falls community hospital, Sky Lakes Medical Center. The sophomore and junior years of the curriculum offer students the theoretical knowledge of disease processes and hands-on exposure to the diagnostic testing protocols appropriate for the profession. General education courses required for a baccalaureate degree are also completed during this period of time, unless students have met those requirements with transfer credit. Upon completion of the junior year on campus, students embark on the 11 month clinical externship in which students are placed via lottery in a clinical setting appropriate for the degree program in which they are enrolled. This is considered the senior year and the capstone for the programs as the students apply the didactic and laboratory skills gained on campus in the patient setting. Most students complete the entire clinical externship at one location. In the event specific exam types are not performed in large enough numbers for ample exposure for the student, additional clinical sites within the geographical location of the main externship site may be utilized.
Students are required to secure their own housing in the geographic location in which they will be completing the clinical externship year. They also must travel to the location at the student's cost. In some cases, this means the student will be physically moving hundreds of miles to the location.
Students also are required to pay tuition for four quarters rather than a typical three quarter academic year, which does add to the financial burden they acquire by the end of the degree. Many of the students enrolled in the

programs are Oregonians and therefore would prefer to complete the externship year closer to home. All students are well aware of the externship requirement prior to entry into the program. To date there have not been clinical shortages, in fact sites are often calling to become an affiliate.

Section 1 – Program Educational Objectives

Program Educational Objectives

The following objectives are what the faculty expects graduates from the DMS program to be able to accomplish.

- Employ diagnostic sonographic imaging techniques, critical thinking skills, effective communication skills, and professional judgment.
- Effectively apply ergonomically correct scanning techniques.
- Successfully complete nationally recognized credential examinations.
- Develop a dedication to independent life-long learning and professional contributions.

Program Student Learning Outcomes

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

Program Faculty Review

Program Student Learning Outcomes and Objectives were reviewed by program faculty during Fall Convocation Program Assessment Meeting.

The Faculty of the Diagnostic Medical Sonography program at Oregon Tech reviewed the following student learning Outcomes and Objectives during 201-18 convocation.

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

Showcase Learning Opportunities

Oregon Institute of Technology is regionally accredited by the Northwest Commission on Colleges and Universities (NWCCU). Oregon Tech graduates have a high pass rate board certification American Registry of Diagnostic Medical Sonographers (ARDMS) board exams. Additionally, the Diagnostic Medical Imaging (DMS) program is accredited by CAAHEP (Commission on Accreditation of Allied Health Educational Programs http://www.caahep.org./.

- Students are able to join the following professional societies:
- American Registry for Diagnostic Medical Sonography (ARDMS)
- Society of Diagnostic Medical Sonography

Our DMS students are granted a yearlong externship students in which they function in the capacity of a student sonographer. They may have the opportunity to attend educational presentations, such as lectures, grand rounds and seminars, relevant to a wide array of conditions and professional development of healthcare providers. By providing such opportunities, we hope to contribute to the students' professional growth, education and competence.

Section 2 – Program Description and History:

Program History

The Diagnostic Medical Sonography Program (DMS) began in 1997 and is one of the five Medical Imaging programs offered on the Klamath Falls campus. The DMS program is selective and admits pre-Medical Imaging students into the professional courses at the sophomore level. Due to this selectivity, the program has good graduation retention rates. The 2017 Oregon Tech graduate survey indicated a median entry salary for DMS graduates at $66,924, with twelve graduates reporting. However, the Bureau of Labor Statistics (www.bls.gov) identified Oregon as one of the top 5 paying states with an annual mean wage for Diagnostic Medical Sonographers of $77,500 in June 2018. Oregon Institute of Technology currently offers baccalaureate degrees in three ultrasound programs: Diagnostic Medical Sonography, Echocardiography and Vascular Technology. The Vascular Technology program was first established in 1992 as an option in Medical Imaging Technology. The program resided within the Department of Health Technologies along with Radiologic Science. The Diagnostic Medical Sonography program was established in 1997. At this time the Vascular Technology program was removed as an option in Medical Imaging Technology and became an option in Ultrasound, along with the Diagnostic Medical Sonography program. The department was renamed as the Medical Imaging Technology Department. Reorganization again occurred in 2006, in anticipation of adding the Echocardiography degree. The DMS and Vascular programs became stand-alone degree programs. The Echocardiography program was added in 2007. Today the Medical Imaging Technology Department includes the following baccalaureate degree programs: Radiologic Science, Nuclear Medicine Technology, Diagnostic Medical Sonography, Echocardiography and Vascular Technology.

Program Location:

Klamath Falls, Oregon

Program Enrollment:

2014-15	2015-16	2016-17	2017-18	2018-19
30	30	30	30	30

Program Graduates:

2014-15	2015-16	2016-17	2017-18	2018-19
24	24	24	24	23

Employment Rates and Salaries:

Employed	Continuing Education	Looking for Work	Not Seeking	Median Salary	Success Rate
100%	0	0	0	$35.00 hr	100%

Board and Licensure Exam Results:

American Registry of Diagnostic Medical Sonographers- Physics	
100% Pass Rate	Class of 2018

American Registry of Diagnostic Medical Sonographers- Abdomen	
100% Pass Rate	Class of 2018

American Registry of Diagnostic Medical Sonographers- OB/GYN	
100% Pass Rate	Class of 2018

Industry Relationships:

Oregon Tech's Diagnostic Medical Sonography program is affiliated with the following 2018-19 industry partners:

Advanced Mobile Diagnostics - Peoria, IL
Alaska Native Medical Center - Anchorage, AK
Albany General Hospital (Samaritan) - Albany, OR
Arizona Doppler Specialists, Phonenix, AZ
Ashland Community Hospital (Asante) - Ashland, OR
Barnes-Jewish Hospital - St. Louis, MO
Bay Area Hospital - Coos Bay, OR
Baylor Heart Hospital - Dallas, TX
Baylor Scott & White - Temple, TX
Benefis Health System - Great Falls, MT
Cedars-Sinai Medical Center - Los Angeles, CA
Cleveland Clinic Foundation - Cleveland, OH
Echo Vision Medical Testing (NOW) Portland, OR
Epic Imaging - Portland, OR
Good Samaritan Regional Medical Center - Corvallis, OR
Good Shepherd Hospital - Hermiston, OR
Grande Ronde Hospital - LaGrande, OR
Hoag Hospital - Newport Beach, CA
Kadlec Medical Center - Richland, WA
Kaiser Permanente Sunnyside Medical Center - Clackamas, OR
Kootenai Hospital - Coeur d'Alene, ID
Lake Washington Vascular Lab, Bellevue, WA
Lebanon Community Hospital (Samaritan) - Lebanon, OR
Legacy Emanuel Hospital & Health Center/ NW Perinatal - Portland OR
Legacy Good Samaritan Hospital & Medical Center - Portland, OR
Legacy Meridian Park Medical Center - Tualatin, OR
Legacy Salmon Creek Medical Center -Vancouver, WA
Mercy Medical Center - Roseburg OR

Mid Columbia Medical Center, The Dalles, OR
North Colorado Medical Center, Greely, CO
Oregon Health & Science University - Portland OR
Oregon Heart & Vascular Institute - Springfield, OR
Oregon Imaging Center, Eugene, OR
Pacific Vascular Inc. - Seattle, WA
Parker Adventist Hospital - Parker, CO
PeaceHealth Sacred Heart Medical Center at RiverBend, Springfield, OR
PeaceHealth Vascular - Longview, WA
Peripheral Vascular Associates, San Antonio, TX
Portland V.A. Medical Center - Portland, OR
Providence Alaska Medical Center - Anchorage, AK
Providence Medford Medical Center - Medford OR
Providence Milwaukie Hospital, Milwaukie, OR
Providence Newburg Medical Center - Newburg, OR
Providence St. Peter - Olympia, WA
Providence Portland Medical Center - Portland, OR
Providence St. Mary Medical Center - Walla Walla, WA
Providence St. Patrick Medical Center - Missoula, MT
Providence St. Vincent Medical Center - Portland, OR
Renown Regional Medical Center - Reno, NV
Rogue Regional Medical Center (Asante) - Medford, OR
Sacred Heart Medical Center - Spokane WA
Sacred Heart Medical/PeaceHealth - Eugene, OR
Sacred Heart Riverbend Medical Center- Springfield, OR
Saint Mary's Regional Medical Center - Reno, NV
Salem Hospital Hospital - Salem, OR
Silverton Hospital Network - Silverton, OR
Sky Lakes Medical Center - Klamath Falls, OR
St. Alphonsus Medical Center, Ontario, OR
St. Charles Medical Center - Bend, OR
St. John Medical Center Peacehealth- Longview, WA
St. Luke's Regional Medical Center - Bosie ID
Swedish Vascular Inc. Seattle, WA
Three Rivers Community Hospital (Asante) - Grants Pass OR
Tillamook Regional Medical Center - Tillamook ,OR
U.C. Davis Health System - Sacramento, CA
University of Utah Hospitals and Clinics - Salt Lake City, UT
University of Vermont, Burlington, VT
University of Washington Medical Center, Seattle WA

Oregon Tech Advisory Board Meeting

Date: 5/01/2018

Committee Members

- Robyn Cole, MS, RDMS, RVT, Diagnostic Medical Sonography Instructor and Program Director, Oregon Institute of Technology, Klamath Falls, OR robyn.cole@oit.edu
- Bobbi Kowash, M.Ed., RDMS, RVT, Diagnostic Medical Sonography Instructor and Clinical Coordinator, Oregon Institute of Technology, Klamath Falls, OR bobbi.kowash@oit.edu
- Dr. Arielle Metz, MD, Heartfelt OB/GYN, Klamath Falls, OR arielle.metz@gmail.com

- Andrea Hampson, RDMS, Diagnostic Medical Sonographer, Sky Lakes Medical Center Ahampson@skylakes.org
- Carol Mick, AA, Owner, Mick Insurance Agency Inc., Klamath Falls, OR bc@mickinsagency.com
- Madison Bean, Student in the Diagnostic Medical Sonography Program, Oregon Institute of Technology, Klamath Falls, OR madison.bean@oit.edu

Meeting with Advisory Board

Program faculty held a meeting with their Advisory Board during the academic year.

Showcase Learning Experiences

Met to view the previous 2018-2019 assessment conclusions items and discussed how to integrate suggestions from industry.

Success Stories – Quotes From Success Students

Ryann Cuthbertson
Student, Class of 2019
Major(s): Diagnostic Medical Sonography
I am so grateful for the small class sizes, and our close relationship to our instructors and classmates.

Tanja Coomes
Student, Class of 2019
Major(s): Diagnostic Medical Sonography
I love the hands-on experience I get here! As a DMS student we use the machines daily.

Veronica Norris
Student, Class of 2018
Major(s): Diagnostic Medical Sonography
I think that general ultrasound best suits my skill set and I love the science behind ultrasound...

Section 3 – Program Student Learning Outcomes

PSLO

All DMS graduates will need to be able to demonstrate the described PLSOs by graduation in order to successfully pursue the professional directions described the program's mission statement.

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.
OIT-BSON 2017-18.2 The ability to work effectively in teams.
OIT-BSON 2017-18.3 The ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines.
OIT-BSON 2016-17.4 Knowledge and understanding of human gross and sectional anatomy relative to normal and abnormal sonographic imaging.
OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.
OIT-BSON 2016-17.6 Knowledge and understanding of ultrasound physical principles and instrumentation.
OIT-BSON 2016-17.7 Knowledge of sonographic biological effects, proper application of sonographic instrumentation relative to imaging and image quality.
OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.
OIT-BSON 2017-18.9 An understanding of diverse cultural and humanistic traditions in the global society.

Origin and External Validation

From these objectives, stem a number of specific and measurable outcomes that scaffold into DMS PSLOs. In addition to being more specific, the outcomes state what students should be able to demonstrate while in the DMS program and provide evidence that the objectives are also being met. Upon graduating from the DMS program at Oregon Tech, students should possess the described objectives that relates back to the programs mission. These set of programmatic learning outcomes steamed from the DMS advisory committee. These objectives reviewed on an annual basis by the DMS Advisory Board.

Changes

There have not been any measureable changes the programmatic student learning outcomes. This conclusion is based on registry pass rates and employment verification.

Section 4 – Curriculum Map

Diagnostic Medical Sonography B.S. Student Learning Outcomes Table

F – Foundation
P – Practice
C – Capstone

COURSE	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	PSLO 6	PSLO 7	PSLO 8	PSLO 9	ESLO 1 - Communication	ESLO 2 – Inquiry & Analysis	ESLO 3 – Ethical Reasoning	ESLO 4 – Quantitative Literacy	ESLO 5 - Teamwork	ESLO 6 – Diverse Perspectives
BIO 231					F										
CHE 101															
CHE 104															
MATH 111															
MIT 103															
BIO 232												F			
MATH 112															
WRI 121															
HUM															
SOC															
BIO 200															
BIO 233															
PSY 201/02/03															
SPE 111	F									F					
WRI 122															
BIO 335			P												
DMS 223	P									P	F	P			
DMS 252		P													
PHY 217															
DMS 224		F		F										F	
DMS 235															F/P

DMS 253															
MIT 231					F										
WRI 227															
DMS 225			F			F							F	P	
DMS 234															
DMS 254															
MIT 232						P									
DMS 346													P		
DMS 352								F							
DMS 365				P			P				P				
DMS 337					P										
SPE 321															
BUS 316/17/13															
DMS 342															
DMS 353								P							
DMS 370		P	P												
DMS 343															
DMS 354									P						
DMS 373															
DMS 388									F/P						
DMS 430	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Section 5 – Assessment Cycle

Diagnostic Medical Sonography B.S. Cycle for PSLOs and ESLOs

PROGRAM STUDENT LEARNING OUTCOMES **3-Year Cycle** **Diagnostic Medical Sonography B.S.**	**2019-20**	**2020-21**	**2018-19**

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.			DMS 343/430 2 Directs 1 Indirect Student Self Survey
OIT-BSON 2017-18.2 The ability to work effectively in teams.		DMS 370 2 Directs 1 Indirect Student Exit Survey	
OIT-BSON 2017-18.3 The ability to provide basic patient care and comfort while utilizing ethical, professionalism and HIPAA guidelines.		DMS 335 2 Directs 1 Indirect Student Exit Survey	
OIT-BSON 2016-17.4 Knowledge and understanding of human gross and sectional anatomy relative to normal and abnormal sonographic imaging.	DMS 354 2 Directs 1 Indirect Student Exit Survey		
OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.			DMS 365/430 2 Direct 1 Indirect Student Exit Survey
OIT-BSON 2016-17.6 Knowledge and understanding of ultrasound physical principles and instrumentation.	MIT 231 2 Directs 1 Indirect Student Exit Survey		
OIT-BSON 2016-17.7 Knowledge of sonographic biological effects, proper application of sonographic instrumentation relative to imaging and image quality.	DMS 353 2 Directs 1 Indirect Student Exit Survey		
OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.			DMS 353/430 2 Directs 1 Indirect Student Exit Survey
OIT-BSON 2017-18.9 An understanding of diverse cultural and humanistic traditions in the global society.		DMS 388 2 Directs 1 Indirect Student Exit Survey	
ESLO 1- Communication			
ELSO 2 – Inquiry & Analysis			
ELSO 3 – Ethical Reasoning			
ELSO 4 – Quantitative Literacy			
ELSO 5 - Teamwork			
ELSO 6 – Diverse Perspectives			

Section 6 –Assessment Activity

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.

Section 6-Assessment Activity

Activity:
Throughout this assessment cycle DMS faculty used a variety of assessment rubrics. All the objectives of the program provides alignment with programmatic outcomes and mission.

Rubric:
The activities were scored and evaluated by DMS faculty separate from course grade. The rubrics provides illustration of the performance criteria, assessment methods, measurement scale, minimum acceptable performance, and results.

Sample:
24 students were used to complete each activity, which is 100% of the student cohort class. No special or unusual characteristics of the student population that should are noted.

Reliability:
All DMS faculty score the activities separately if multiple scoring faculty were needed on certain activities. The averages were used to as a final score using the compiled data.

Multiple Sites:
Measures are not used at all multiple sites/modes where program is offered, because the Klamath Falls campus is the only campus offering such program.

Performance Target:
The results of our national registry have been 100% in the past 5 years, thus no performance targets have been modified.

Performance Level:
Results are presented, and they directly relate to objectives. The desired results for objectives, are clearly presented, and were derived statistical analyses, as appropriate. Raw data is provided as attachments in the appendices. 100% of the student cohort meet the programmatic performance target.

History of Results:
Annual JRCDMS accreditation and 5 year reaccreditation validates the historical success of the DMS program at Oregon Tech.

Faculty Discussion:
All qualitative and quantitative data/information was provided to all program faculty, mode and details of communication at conclusion of our programmatic convocation meeting. In addition, the DMS information shared with our clinical affiliates and advisory board members as meeting minutes.

Interpretation:
A complete and clear narration and analysis of the assessment results were found in the DMS faculty, advisory board, and annual clinical instructors meeting minutes. Interpretations of results seem reasonable and at time no changes are needed programmatically.

Summary of 2018-2019 Assessment Activities			
Student Learning Outcome	***Assessment Method***	***Course***	***F – Foundation*** ***P – Practice*** ***C – Capstone***
OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.	Direct Assessment Exam Questions-Multiple Choice Direct Assessment Topic Speech Indirect Assessment *Practical , self-evaluation*	DMS 343 DMS 343 DMS 343	Practice Practice Capstone
OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.	Direct Assessment Test Questions Direct Assessment Test Questions Indirect Assessment Survey	DMS 365 DMS 365 DMS 430	Practice Practice Capstone
OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.	Direct Assessment Test Questions Direct Assessment Practical Exam Indirect Assessment Student Survey	DMS 353 DMS 353 DMS 430	Practice Practice Capstone

Student Learning Outcome PLSO 1: The student will demonstrate effective oral, visual, and written communication skills.

Direct Assessment #1 –Multiple Choice Examination

The faculty assessed the written component of the PLSO 1 communication outcome in DMS 343 Pediatric Sonography in Spring 2018 using student presentation projects. Presentations were assessed via OIT's writing rubric criteria described in the table below. There were 24 junior students involved in the assessment.

Assessment Measure # 1 –Multiple Choice Examination

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Purpose	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Organization	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
Support	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	95%
Style	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
Conventions	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	80%
Documentation	OIT Essay Rubric	1-4 Scale, % at 3 or 4	80% at 3 or 4	80%

Summary: The results are summarized in the table seen above. The results concluded that DMS students are exceeding public speaking expectations.

Direct Assessment #2-Classroom Speech

The faculty assessed the speech component of the PSLO 1 communication outcome in DMS 343 Pediatric Sonography, spring 2018 using an oral assignment. The oral assignment was assessed via OIT's essay rubric criteria described in the table below. There were 24 junior students involved in the assessment.

Assessment Measure # 2- Classroom Speach

OIT BSON 2018-19.1 Effective oral, visual, and written communication skills.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
The ability to communicate both orally and in writing as it relates to: • Obtaining and recording patient history.	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
The ability to communicate both orally and in writing as it relates to:	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%

• Explaining or discussing procedures.				
The ability to communicate both orally and in writing as it relates to: • Discussing patient consent forms.	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
The ability to communicate both orally and in writing as it relates to: • Providing clear verbal instructions to patients either face to face or from a distance of several feet. That includes effectively pronouncing and enunciating the English language and to explain instructions to patients with hearing deficits.	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	80%

The ability to communicate both orally and in writing as it relates to: • Read, interpret and follow instructions in timely manner.	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
The ability to communicate both orally and in writing as it relates to: • Be able to communicate proficiently with colleagues and other health field professionals i.e. reporting to physicians.	Exam Question	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%

Summary: 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 OIT's essay rubric. The scores revealed positive results and deemed the DMS students writing abilities as meeting expectations.

Indirect Assessment #3- Self Assessment

The faculty assessed this outcome in DMS 365, Sonographic Pathology, by means of a case report. The faculty rated the proficiency of the students using the performance criteria described in table below.

Assessment Measure #3- Self Assessment

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Content	OIT Public Speaking Rubric-Self Assessment	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Organization	OIT Public Speaking Rubric-Self Assessment	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%
Style	OIT Public Speaking Rubric-Self Assessment	1-4 Scale, % at 3 or 4	80% at 3 or 4	90%
Delivery	OIT Public Speaking Rubric-Self Assessment	1-4 Scale, % at 3 or 4	80% at 3 or 4	80%
Visuals	OIT Public Speaking Rubric-Self Assessment	1-4 Scale, % at 3 or 4	80% at 3 or 4	100%

Summary: The DMS Faculty met and agreed that students in our Diagnostic Medical Sonography program perform at an acceptable level for effective communication skills. The raw data indicates that the target DMS students assessed were proficient in public speaking skills. The goal of this assessment was to determine how well the students would perform as a public speaker. The students were scored utilizing the OIT Public Speaking Rubric. Most of the students comprehended a very thorough understanding of the material. Most students delivered an effective and sufficient amount of information while speaking. DMS 343 was selected as a course because students needed to practice their speaking skills as if they were presenting a case to a radiologist. This setting allowed the instructor to evaluate the student's skills under pressure and in an environment that was under subjectivity of the intended audience. The results are summarized in the table seen above. The results concluded that DMS students are exceeding public speaking expectations.

Student Learning Outcome #5: The student will demonstrate knowledge and understanding of human physiology, pathology and pathophysiology.

Direct Assessment #1- Multiple Choice Examination

The faculty assessed this outcome in DMS 365 Sonographic Pathology using five test questions to evaluate human anatomy knowledge. Students who scored 80% correct have met our expectations for proficiency. There were 24 DMS junior students involved in the assessment. Results are detailed in the table below.

Assessment Measure # 1-Multiple Choice Examination				
OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.				
Performance Criteria	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Demonstrates knowledge of human anatomy	Written exam in DMS 365	1 point each for correct problem	80 % class average	100%
Apply concepts and knowledge of the general terminology	Written exam in DMS 365	1 point each for correct problem	80 % class average	100%

Sonographically identifies specific gross human anatomy and surrounding structures in sagittal section	Written exam in DMS 365	1 point each for correct problem	80 % class average	100%
Identifies anatomic and relative sonographic landmark	Written exam in DMS 365	1 point each for correct problem	80 % class average	100%
Identifies sonographic modifications for pathologic differential diagnoses	Written exam in DMS 365	1 point each for correct problem	80 % class average	100%

Summary: Data collection was achieved by means of test question evaluation that pertained to the performance criteria. There were 24 DMS students that participated in this activity. 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 human anatomy, pathology, and pathophysiology. There were no specific weaknesses that needed corrective action.

Direct Assessment # 2-Practical Examination

The faculty assessed this outcome in DMS 365 Sonographic Pathology using five practical test questions to evaluate human anatomy knowledge. Students who scored 80% correct have met our expectations for proficiency. There were 24 junior students involved in the assessment. Results are detailed in the table below.

OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Sonographically identifies specific gross human anatomy and surrounding structures in sagittal section	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	90%
Sonographically identifies specific gross human anatomy and surrounding structures in transverse &/or coronal section(s)	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	90%
Identifies anatomic and relative sonographic landmarks	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	100%
Identifies sonographic modifications for pathologic differential diagnoses	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	90%

Summary: The DMS faculty found these results to be acceptable overall.

Assessment Measure # 3- Self-reflection survey

The DMS Faculty indirectly assessed this outcome in DMS 365 Sonographic Pathology, Spring 2018 by asking 24 junior students to rate themselves, using a Blackboard survey tool, as to their personal assessment of the following performance criteria found in the following rubric. These results were summarized using the same performance criteria, seen below.

Assessment Measure # 3 Self-reflection Survey				
OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.				
Performance Criteria	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Sonographically identifies specific gross human anatomy and surrounding structures in sagittal section	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	100%
Sonographically identifies specific gross human anatomy and surrounding structures in transverse &/or coronal section(s)	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	100%
Identifies anatomic and relative sonographic landmarks	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	100%
Identifies sonographic modifications for pathologic differential diagnoses	Lab Practical in DMS 353	1 - 4 scale, % at 3 or 4	**80% at 3-4**	90%

Summary: The full population for this assessment displayed satisfactory level of aptitude and most demonstrated high skill sets.

Student Learning Outcome #8: The student will demonstrate appropriate ergonomic scanning applications.

Direct Assessment #1-OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.

The faculty assessed this outcome in DMS 353, Junior Diagnostic Medical Sonography Lab, Spring 2018 by means of an ergonomic practical. The DMS juniors were given 3 criteria to focus on; correct posture, holding the transducer properly, and proper body mechanics. This assignment in conjunction with a graded practical was use to gather results. Students earned a grade for this assignment. The faculty rated student proficiency with ergonomic provisions using a graded rubric. The students were rated on a scale from 1-10; ten being the highest score possible. 24 junior students participated in this assessment. The faculty rated the proficiency of the students using the performance criteria described in the table below.

Assessment Measure #1				
OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.				
Performance Criteria	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Student obtained correct posture	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	90%
Student held transducer correctly	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student utilized proper body mechanics	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	90%
Student took extra time to position patient	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	90%

Assessment Measure #2-OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.

To accompany the assessment above, the faculty indirectly assessed this outcome in DMS 353 Junior Laboratory, sinter 2018 by means of a practical examination, by scoring 24 juniors students to rate their level of competency. 24 students completed the assessment. These results are summarized, shown below.

Assessment Measure #2				
OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.				
Performance Criteria	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results**
Student obtained correct posture	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student held transducer correctly	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student utilized proper body mechanics	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	90%
Student took extra time to position patient	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%

Summary: Effective and proper ergonomic skills are essential to a working sonographer. These students were able to demonstrate effective techniques during a live practical assessment. The goal was that 80% of these students earn at least an 8 out of 10 points possible for each performance criteria. The outcome demonstrated that the students had proper body mechanics and demonstrated overall excellent ergonomic skills.

Indirect Assessment #3- Appropriate ergonomic scanning applications.

To accompany the assessment above, the faculty indirectly assessed this outcome in DMS 430 spring 2018 exit survey, by asking the 24 senior students to rate their level of competency. There were 24 students who completed the assessment. These results are summarized, shown in table below.

Assessment Measure #3

OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
Student obtained correct posture	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student held transducer correctly	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student utilized proper body mechanics	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%
Student took extra time to position patient	Practical examination scored with rubric	1 scale 1-10	80% at 8 or better	100%

Summary: The primary assessment method was composite average of a Clinical Site Program Evaluation. A survey was administered at the conclusion of the DMS class of 2018. It was the desire that students scored at least with an 80% or better. The survey summary results revealed adequate results with students scoring above the benchmark of 80%. No follow up recommendations are suggested at this time. The DMS juniors exceeded all performance criteria for understanding ergonomic provisions in all three provision areas. The entire population for this assessment displayed acceptable level of proficiency and most exhibited high proficiency.

Section 7-Data-driven Action Plans: Changes Resulting from Assessment

OIT-BSON 2018-19.1 Effective oral, visual, and written communication skills.	
Criterion	Met
Summary	Board pass 100%
Improvement Narrative	N/A

OIT-BSON 2018-19.5 Knowledge and understanding of human physiology, pathology and pathophysiology.	
Criterion	Met
Summary	Board pass 100%
Improvement Narrative	N/A

OIT-BSON 2018-19.8 Appropriate ergonomic scanning applications.	
Criterion	Met
Summary	Board pass 100%
Improvement Narrative	N/A

Section 8.Closing the Loop: Evidence of Improvement in Student Learning

Our diagnostic medical sonography program enables students to become registered professionals, effective communicators, problem solvers, critical thinkers, and lifelong learners. Our program strives to teach professional ethics, diagnostic techniques, and qualities that will contribute to the field of sonography.

DMS faculty have conducted analysis of weak areas contained within our program. The biggest limitation has been the lack of functional obstetrical simulators. This issue will be remedied by allowing additional hospital rotations at SLMC. Providing a warm atmosphere has created some climate discrepancies in our lab. This has been a constant battle since the building is supplied by geothermal heating. I believe this issue has been remedied by our recent request to facilities to keep the heat on at a more comfortable level.

Oregon Tech's DMS faculties were able to retrieve some qualitative and qualitative data from the surveys we administered to current students, graduates, and employers. The bulk of our educational assessment is the process of documentation in measurable terms, knowledge, skills, attitudes, and professionalism. Our assessment focuses on the individual learner and the learning class. Annually the Diagnostic Medical Sonography faculty reviewed the program purpose, objectives, and learning outcomes during the fall faculty meeting in September. The faculty reaffirmed the purpose and aligned the Programmatic Student Learning Outcomes assessments with Institutional Student Learning Outcomes

The 2018-2019 assessment revealed no charges were necessary. Based on the assessment knowledgebase baselines continue to improve. The program will continue its mission to provide skilled teaching methods.

Strengths: Students demonstrated outstanding performance in all criteria for this assessment year.

Weakness: None at this time.

Actions: No action needed at this time.

References

Program Assessment Coordinator: Robyn Cole, Associate Professor, Medical Imaging Technology