Oregon Institute of Technology
Medical Imaging Technology Department
Vascular Technology Program Assessment
2018-2019

I. Introduction

The Vascular Technology Program officially began in 1992 and is one of the five current on-campus Medical Imaging programs at Oregon Institute of Technology. Enrollment trends from 2002 – 2018 have varied from 50 to 89 students per year in the program. By fall term of 2018, there were 62 students enrolled in the program. For the class of 2018, retention was 76.5% and attrition was 23.5%

- The number of students who entered the VT program for the cohorts of graduating classes from 1994 to 2018 was 617. Of those 617 students, 474 have graduated.
- Overall retention has therefore been 76.8% and attrition has been 23.3%

- Core VT program course failure rates per the 617 students accepted were as follows:
    - 7.6% or 47 failures in MIT 231, Sonographic Physics & Instrumentation I
    - 3.2% or 20 failures in MIT 232, Sonographic Physics & Instrumentation II
    - 3.1% or 19 failures in VAS246, Peripheral Arterial Disease 1
    - 2.6% or 16 failures in VAS420, Externship.
    - 2.1% or 13 failures in BIO 220, Cardiovascular Physiology.
    - 1.8% or 11 failures in VAS365. Abdominal Disease
    - 0.8% or 5 failures in PHY217, General Physics.
    - 0.8% or 5 failures in VAS245, Peripheral Venous Disease
    - 0.8% or 5 failures in VAS214, Vascular Anatomy
    - 0.5% or 3 failures in VAS225, Patient Management Practices
    - 0.5% or 3 failures in VAS366, Special Circulatory Problems
    - 0.3% or 2 failures in VAS 335, Radiographic Vascular Anatomy

- Combining the 617 students with the students accepted into the graduating classes of 2019, 2020 and 2021, a total of 684 students have been accepted into the VT program by the Fall term of 2018.

The Job placement for the class of 2018 at six months was 100%. The average salary for the graduates of the classes of 2016, 2017 & 2018 was $63,000 per year.

II. Program Purpose/Mission Statement, Goals, Objectives and Student Learning Outcomes

The Vascular Technology faculty met one time formally and multiple times since from the fall 2007 to fall 2018 and have consistently agreed to adopt the student learning outcomes as suggested by the programmatic accrediting body known as the, "Joint Review Committee on Education in Diagnostic Medical Sonography." The final version is listed below.

Closing the Loop items: from the faculty meeting conducted spring term 2018, planned improvements from previous assessment include:

Vascular Technology Program Purpose/Mission Statement

The Bachelor of Science program in Vascular Technology provides students with the knowledge, clinical skills and behaviors to become competent vascular technology professionals.

Program Goal(s)

"To prepare competent entry level vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains."

Program Educational Objectives

1. The program prepares students to utilize diagnostic techniques, sound judgment and good decision making to provide patient services.
2. The program communicates the importance of becoming credentialed in the profession of vascular technology.
3. The program prepares students who think critically, communicate effectively and exemplify professional ethics.
4. The program conveys the importance of becoming life-long learners and responsible citizens.

Student Learning Outcomes

The students will demonstrate:

1. the ability to communicate effectively in oral, written and visual forms.
2. the ability to work effectively in teams.
3. an ability to provide basic patient care and comfort.
4. professional judgment and discretion including ethics.
5. knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy.
6. knowledge and understanding of vascular physiology, pathology, and pathophysiology.
7. knowledge and understanding of vascular physical principles and instrumentation.
8. knowledge and understanding of clinical vascular diagnostic procedures and testing
9. an understanding of diverse cultural and humanistic traditions in the global society.

Additional Student Learning Opportunities

Students in the Vascular Technology Program are given the opportunity to every other year attend the UCDavis conference in Sacramento, CA. Students are also encouraged to attend the Annual Society of Vascular Ultrasound conferences when held on the West Coast or near their extern sites during the student's senior year.

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 each per year on a three-year cycle, as listed in Table #1 below.

Vascular Technology Student Learning Outcomes Assessment Schedule	2018 - 2019	2019 – 2020	2020 – 2021
1. The student will demonstrate the ability to communicate effectively in oral, written and visual forms.		X	
2. The student will demonstrate the ability to work effectively in teams.		X	
3. The student will demonstrate an ability to provide basic patient care and comfort.		X	
4. The student will employ professional judgment, and discretion including ethics	X		
5. The student will demonstrate knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy	X		
6. The student will demonstrate knowledge and understanding of vascular physiology, pathology, and pathophysiology.			X
7. The student will demonstrate knowledge and understanding of vascular physical principles and instrumentation.			X
8. The student will demonstrate knowledge and understanding of clinical vascular diagnostic procedures and testing			X
9. The student will demonstrate an understanding of diverse cultural and humanistic traditions in the global society.	X		

Table #1, Assessment cycle.

IV. Summary of 2016-17 Assessment Activities

A. Student Learning Outcome #4: The student will employ professional judgment, and discretion including ethics

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A1.

Direct Assessment #1

The faculty assessed this outcome with 21 students in VAS 366 Special Circulatory Problems during Winter term 2019, using an ESLO Ethical Reasoning related homework assignment. The faculty rated the proficiency of students using the performance criteria as set forth by the ESLO Ethical Reasoning Rubric described in Table #2 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results - % with Target. or higher
Theory: Student demonstrates knowledge of different ethical theories and codes.	Course Professional Evaluation	1-4 scale	75% with a score of 3 or higher	67%
Recognition: Student can recognize decisions requiring ethical judgments.	Course Professional Evaluation	1-4 Scale	75% with a score of 3 or higher	33%
Logic: Student demonstrates knowledge of logic of ethical reasoning.	Course Professional Evaluation	1-4 Scale	75% with a score of 3 or higher	29%
Judgment: Student can make and support plausible ethical decisions	Course Professional Evaluation	1-4 Scale	75% with a score of 3 or higher	76%

Table #2.

Students performed below expected levels in most areas for the vascular ethics assignment which was most similar to the data collected campus wide for the ESLO ethics assignments.

As a result of the data, the vascular faculty agreed that all components of the Ethics Assignment need to be more clearly explained in the instructions. Also, our society code of ethics has changed from three pages of rather nebulous descriptions to 9 very specific sentences. Although we teach in general to our society's code, the faculty has agreed to

begin incorporating more discussion in labs regarding the specifics of the code and where possible incorporate evaluation of such in our lab professional evaluations.

Direct Assessment #2

The faculty assessed this outcome with 14 students in VAS 420 from the 2018-2019 academic year, using extern student professional evaluations where components of outcome #4 were assessed by industry (clinical supervisors/instructors). The faculty rated the proficiency of students used in the performance criteria described in Table #3 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results - % with Target. or higher
Professional Judgment/ Critical Thinking	Extern Professional Evaluation	1 – 100% Scale	85% with a score of 85% or higher	100%
Quality of Work	Extern Professional Evaluation	1 – 100% Scale	85% with a score of 85% or higher	100%
Attitude Towards Criticism	Extern Professional Evaluation	1 – 100% Scale	85% with a score of 85% or higher	100%
Interpersonal Relationships with Staff	Extern Professional Evaluation	1 – 100% Scale	85% with a score of 85% or higher	100%
Professional Ethics	Extern Professional Evaluation	1 – 100% Scale	85% with a score of 85% or higher	100%

Table #3

From Industry, or the very profession Oregon Tech prepares the Vascular program students for, the extern students performed well above expectation. This is in quite stark contrast to the ESLO ethics assignment evaluated above.

As a result of the data, the vascular faculty agreed the additional activities to include for the direct assessment above regarding our society's code will be adequate as industry was most happy with the ethical conduct our extern students demonstrate.

Indirect Assessment #1

The faculty assessed this outcome with 13 students in VAS 420 from the student extern exit surveys spring term, 2018, by asking them to rate how well the Oregon Tech Vascular Technology program and their extern site prepared them for this learning outcome #4. The faculty rated the proficiency of students used in the performance criteria described in Table #4 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student rating of how OIT prepared them for outcome #4	2017 – 2018 Extern Exit Survey	1 – 4 Scale	90% with a score of 3.0 or higher	100%
Student rating of how their extern site prepared them for outcome #4	2017 – 2018 Extern Exit Survey	1 – 4 Scale	90% with a score of 3.0 or higher	84.6%

Table #4

Students rated the vascular program quite highly in regard to PSLO#4. Both on campus and while on extern, students have been subject to a rather detailed professional evaluation review. This absolutely helps to both communicate the expectations of the outcome and to offer some instruction as well. Other than the professional evaluation conducted for the extern students by their clinical instructors while on extern, not much instruction is included by the clinical instructors and thus the lower rating by the students

As a result of the data, the vascular faculty agreed the additional activities to include for the direct assessment above regarding our society's code will be adequate as industry was most happy with the ethical conduct our extern students demonstrate.

B. Student Learning Outcome #5: The student will demonstrate knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy.

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A2.

Direct Assessment #1

The faculty assessed this outcome in VAS 335 Radiographic Vascular Anatomy, during Spring term 2019, using select questions from the final examinations of 18 students. The faculty rated the proficiency of students used in the performance criteria described in Table #5 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results - % with Target. or higher
Cerebrovascular Cross Sectional and Vascular Anatomy	Questions from VAS 214 Final Examination	1 to 5 scale per 5 questions given	80% of students with 4.0 average or higher	100%
Thoracic Cross Sectional and Vascular Anatomy	Questions from VAS 214 Final Examination	1 to 5 scale per 5 questions given	80% of students with 4.0 average or higher	100%
Abdominal Cross Sectional and Vascular Anatomy	Questions from VAS 214 Final Examination	1 to 5 scale per 5 questions given	80% of students with 4.0 average or higher	100%
Abnormal Cross Sectional Vascular Anatomy	Questions from VAS 214 Final Examination	1 to 4 scale per 5 questions given	80% of students with 3.0 average or higher	100%

Table #5.

Students performed above expectations in all categories for PSLO #5. Not so much a "closing the loop" activity, but extra emphasis had been included in the previous Fall term VAS 214 course, Vascular Anatomy, to include drawings and explanations regarding orientation of how vascular anatomy should appear in Computed Tomography, Magnetic Resonance Imaging and X-Ray images

As a result of the data, the vascular faculty has agreed to continue the VAS 214 activity mentioned above.

Direct Assessment #2

The faculty also assessed this outcome in VAS 420, from the 2018-2019 academic year, using randomly selected student competencies from 14 students where outcome #5 was assessed by industry. The faculty rated the proficiency of students used in the performance criteria described in Table #6 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results - % with Target or higher
Associates Anatomical Landmarks with Vascular Anatomy	Student Competency Evaluation #5, a_1.	1 – 100% Scale	90% with 90% or higher	93%
Accurately Identifies Cross-Sectional Anatomy in Ultrasound, and other imaging modalities for Quality assurance.	Student Competency Evaluation #5, b.	1 – 100% Scale	90% with 90% or higher	93%
100Recognizes Normal and Abnormal Vascular Anatomy	Student Competency Evaluation #5, c.	1 – 100% Scale	90% with 90% or higher	100%

Table #6,

Students performed slightly above expectations for PSLO #5 as rated by industry. In addition to proper identification of cross-sectional anatomy for the field of Vascular Technology, students at many of our Vascular program affiliate sites involve students with the lab accreditation process where other cross-sectional images for CT, MRI and X-ray are correlated with vascular studies. So certain skills are learned on extern for this requirement.

As a result of the data, the Vascular faculty determined to maintain the same degree of rigor for PSLO#5

Indirect Assessment #1

The faculty assessed this outcome with 13 students in VAS 420 from the student extern exit surveys spring term, 2018, by asking them to rate how well the Oregon Tech Vascular Technology program and their extern site prepared them for this learning outcome #5. Student rating is described in Table #7 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Student Rating of how OIT Prepared them for Outcome #5.	2017 – 2018 Extern Exit Survey	1 – 4 Scale	80% with a score of 4.0 or higher	100%
StudentRrating of how their Extern Site Prepared them for Ooutcome #5.	2017 – 2018 Extern Exit Survey	1 – 4 Scale	80% with a score of 4.0 or higher	92%

Table #7,

Students had rated their training for PSLO #5 higher than was expected and actually quite high for their extern sites

As a result of the data, the Vascular faculty determined to maintain the same degree of rigor for PSLO#5

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

The Vascular Technology faculty conducted an analysis of where this outcome is reflected in the curriculum. The mapping of this outcome in the Vascular Technology courses can be found in Appendix A, Student Learning Outcome-Course Matrices Table A3.

Direct Assessment #1

The faculty assessed this outcome in VAS 225, during Fall term 2018, using select questions from the final examinations of 23 students. The faculty rated the proficiency of students used in the performance criteria described in Table #8 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Reconciles Dissagreements	Question #8 from final exam	1 – 2 scale for question #8	90% with correct answer	100%
Caring for Patients Experiencing Serious Loss	Question #9 from final exam	1 – 2 scale for question #9	90% with correct answer	100%
Patient Expectations	Question #43 from final exam	1 – 2 scale for question #43	90% with correct answer	100%
Nonverbal Communication	Question #46 from final exam	1 – 2 scale for question 46	90% with correct answer	96%

Table #8

Students performed above expectations in all categories. The Vascular faculty agreed that most incoming students to the vascular program already have a high level of awareness of acceptance of cultural difference and demonstrate excellent tolerance. As far as knowledge of cultural and humanistic traditions, more could be incorporated, but at this point in time, does not appear to be problematic

As a result of the data, the faculty of the Vascular Technology Program will remain open to potentially incorporating more cultural traditions where possible.

Direct Assessment #2

The faculty will also assess this outcome with 14 students in VAS 420 from the 2018-2019 senior extern year using random scanning competencies where this outcome is assessed by industry. The faculty will rate the proficiency of students used in the performance criteria described in Table #9 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target or higher
Appropriately works with interpreters to gather patient history	Student Competency Evaluation #9, a.	1 – 100 Scale	85% with a score of 85% or higher	100%
Avoids demonstration of prejudice	Student Competency Evaluation #9, b.	1 – 100 Scale	85% with a score of 85% or higher	100%
Recognize cultures have different traditions in medicine	Student Competency Evaluation #9, c.	1 – 100 Scale	85% with a score of 85% or higher	100%

Table #9

Students performed above expectations in all categories. There are times when clinical instructors from our affiliate sites feel they are not qualified to fully evaluate PSLO #9 as they too feel they could have more training. But again, industry rates our students most highly for their ability to show tolerance to patients of various cultural backgrounds

As a result of the data, the Vascular faculty determined to maintain the same degree of rigor for PSLO#9

Indirect Assessment #1

The faculty assessed this outcome with 13 students in VAS 420 from the student extern exit surveys spring term, 2018, by asking them to rate how well the Oregon Tech Vascular Technology program and their extern site prepared them for this learning outcome #9. The faculty will rate the proficiency of students used in the performance criteria described in Table #10 below.

Performance Criteria	Assessment Methods	Measure Scale	Minimum Acceptable Performance	Results -% with Target Av. or higher
Student rating of how OIT prepared them for outcome #9.	Exit Survey	% scale per category used	80% with a score of 3.0 or better	92
Student rating of how their extern site prepared them for outcome #9.	Exit survey	% scale per category used	80% with a score of 3.0 or better	100%

Table #10

Students rated themselves above expectations for how well they have been trained for PSLO#9. A potential reason for students rating their clinical extern sites as being better trained for this learning outcome is that almost all of our clinical affiliates are located in the greater metropolitan cities of our country with greater diversity of patients than they were exposed to during their clinical rotations at Sky Lake Medical Center in Klamath Falls, OR.

As a result of the data, the Vascular faculty determined to maintain the same degree of rigor for PSLO#5

V. Evidence of Student Learning

During the 2018-19 academic year, the program faculty formally assessed the student learning outcomes summarized below. Additional details on these assessment activities can be found in the attached assessment report and in department records.

Student Learning Outcome #4: The student will employ professional judgment, and discretion including ethics

Strengths: The Senior extern students scored above expectation in all categories by the very industry affiliations who will be hiring the Oregon Tech Vascular Technology program graduates. The vascular faculty believe this was due, in no small part, to the professional evaluations conducted during on-campus labs and on extern.

Areas needing improvement: Although the vascular program had taught in general to the Society of Vascular Ultrasound's code of ethics, the faculty has agreed they would incorporate more discussion in labs regarding the specifics of the code and where possible, incorporate better evaluation of such in lab professional evaluations.

Student Learning Outcome #5: The student will demonstrate knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy.

Strengths: As had been mentioned in previous assessment activities for PSLO #5, student knowledge of gross anatomy, cross-sectional anatomy, normal vs. abnormal anatomy was/is taught repeatedly in higher-level program courses and during the whole extern experience. Again, industry had rated student most excellently in student competency evaluations. As has been proven valuable in previous closing the loop activities, the students will continue to produce clay models to identify important artery collateral channels from the external carotid artery to the internal carotid artery.

Areas needing improvement: None at this time.

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

Areas needing improvement: Some concern from industry was indicated as to how well the students had worked with language interpreters when this outcome was assessed during the 2015-2016 academic year. As a matter of lecture and lab conversation, emphasis was made regarding how to treat language interpreters as they represent patients who cannot effective speak English. As evidenced by the higher scores from in industry in regard to this outcome, our activities have been proven effective

Plans for improvement: None at this time.

VI. Changes Resulting from Assessment.

In regard to the ethics piece in PSLO#4, it had come to the attention of the vascular faculty that the Society of Vascular Technology (SVU) has written very specific sentences to focus on the central issues of their code of ethics. Because the components of the of the SVU code of ethics are much easier to teach to over the previous and rather nebulous verbiage used by the society in the past, the vascular faculty had decided to indeed teach more directly to the code.

The mini-practicals implemented in the VAS 214 Vascular Anatomy course in response to requests from Vascular Industry have proven to be so valuable to both students and faculty, that the same will be implemented in VAS 366 Special Circulatory Problems and VAS 367 Cerebrovascular Disease. Again, the cohort of students these mini-practicals were implemented with, will not be out for extern until the 2020/2021 academic year. When this cohort of student actually attend extern, we will petition those who had made the original requests from industry to determine the true value of the mini-practicals.

VII. Qualitative Assessment:

Although quantitative assessment has been the most paramount charge in the development of assessment criteria, the qualitative assessment recommendations the vascular faculty have received from our industry affiliate extern professionals was regarded highly. As was reported in the Vascular Technology 2017-2018 Assessment Report, some of those recommendations included:

- Scanning skills/technique – Each had bad habits that were hard for them to break. Considering they have had two years of access to machines, it is hard to understand why each struggled with things like:
    - Obtaining and maintaining a good, full long axis image on a typical straight segment of vessel.
    - Demonstrating they can keep the probe stable while walking the Doppler through a segment.
    - Holding the probe properly. All came in scanning with a grip at the butt end of the probe instead of near the base where they could better stabilize the probe to help with something like item 2 above.
    - Heel toeing the probe to improve image or better align Doppler.
    - Transitioning from sagittal to transverse without putting both hands on the probe.
- Physiologic testing
    - Unable to readily locate and/or optimize Doppler signals in vessels at the ankle/foot.
    - Unable to locate and optimize CFA and Pop Doppler signals.
    - Cuff wrapping. Inconsistency from limb to limb and one level to the next.

    - Pressure measurement. Challenges staying on a vessel and slowly releasing cuff pressure (manual sphygmo) for accurate measurement.
    - PVR basics. Understanding of the waveforms as well as understanding that, unlike with the Doppler waveform analysis, you have to have gain settings the same to compare PVR waveforms accurately.
    - Digit assessment. Similar issues to above, individuals struggle with releasing cuff pressure in a slow and smooth manner to get an accurate pressure. We do toes on probably 90% of our ABI and SEGS exams.
- Protocol familiarity
    - I know you can't force this upon students, but I have stressed it to each of the last incoming students that they should familiarize themselves with some of the basic protocols that we will be focusing on during the first term (Lower venous, carotid, and ABI/physiologic testing).

This information had been reviewed and many changes made as a result in the vascular program that were never reported in quantitative assessment. In this report however, the vascular faculty is convinced it should at least be mentioned.

As a result, the Vascular Faculty had implemented 6 mini-practical exams into the Fall 2018, VAS 214 Vascular Anatomy Labs to address each of the issues mentioned above. Although the cohort of students from this class of 2021, had not begun their extern experience where industry could evaluate them until July 1, 2020, the vascular faculty had high hopes for good evaluations as a result of the activity.

The vascular faculty agreed the success of these mini-practical conducted during the Fall of 2018 was so positive both from the standpoint of value expressed by students and dynamics valued by the faculty, that mini-practicals would be also incorporated into the Junior level VAS 366 Special Circulatory Problems and VAS 367 Cerebrovascular Disease labs as well.

Appendix A1

SLO #4: The student will employ professional judgment, and discretion including ethics

	Sophomore			Junior			Senior		
Fall	BIO 220	Cardio Physio		BUS 317	Health Care		VAS 420	Extern	E
	BIO 346	Patho Physio		SPE 321	Sm Group				
	PHY 217	Phy of MI		VAS 337	Survey Echo				
	VAS 214	Vas Anatomy		VAS 365	Abd Vas	E			
				Soc Sci	Soc Sci elective				
Win	BIO 347	Patho Phys II		BUS 316	TQ in Health		VAS 420	Extern	E
	VAS 210	Vas Prin Inst I		CHE 210	Clin Pharm				
	VAS 245	Peri Ven Disease	I E	VAS 366	Circ Probs	E			
	VAS 335	Radio Vas Anat		VAS 375	Abd Sono				
				HUM Elec	Hum elective				
Spr	VAS 211	Vas Prin Inst II		VAS 367	Cerebro Disease	E	VAS 420	Extern	E
	VAS 225	Patient Mgmt	I E	VAS 385	Vas Lab Mgmt				
	VAS 246	Peri Art Disease	E	VAS 388	Extern Orient				
	WRI	Tech		COM	COM				

	227	Report		Elec	elective				
	Soc Sci	Soc Sci elective		HUM Elec	HUM elective				

A1, SLO#4 Course Matrix

Appendix A2

SLO #5: The student will demonstrate knowledge and understanding of human gross anatomy sectional anatomy and normal and abnormal vascular anatomy.

	Sophomore			Junior			Senior		
Fall	BIO 220	Cardio Physio		BUS 317	Health Care		VAS 420	Extern	R
	BIO 346	Patho Physio		SPE 321	Sm Group				
	PHY 217	Phy of MI		VAS 337	Survey Echo				
	VAS 214	Vas Anatomy	I E	VAS 365	Abd Vas	R			
				Soc Sci	Soc Sci elective				
Win	BIO 347	Patho Phys II		BUS 316	TQ in Health		VAS 420	Extern	R
	VAS 210	Vas Prin Inst I		CHE 210	Clin Pharm				
	VAS 245	Peri Ven Disease	R E	VAS 366	Circ Probs	R			
	VAS 335	Radio Vas Anat		VAS 375	Abd Sono				
				HUM Elec	Hum elective				
Spr	VAS 211	Vas Prin Inst II		VAS 367	Cerebro Disease	R	VAS 420	Extern	R
	VAS 225	Patient Mgmt		VAS 385	Vas Lab Mgmt				
	VAS	Peri Art	R	VAS	Extern				

	246	Disease	E	388	Orient				
	WRI 227	Tech Report		COM Elec	COM elective				
	Soc Sci	Soc Sci elective		HUM Elec	HUM elective				

A2, SLO#5 Course Matrix

Appendix A3

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

	Sophomore			Junior			Senior		
Fall	BIO 220	Cardio Physio		BUS 317	Health Care		VAS 420	Extern	R
	BIO 346	Patho Physio		SPE 321	Sm Group				
	PHY 217	Phy of MI		VAS 337	Survey Echo				
	VAS 214	Vas Anatomy		VAS 365	Abd Vas				
				Soc Sci	Soc Sci elective				
Win	BIO 347	Patho Phys II		BUS 316	TQ in Health		VAS 420	Extern	R
	VAS 210	Vas Prin Inst I		CHE 210	Clin Pharm				
	VAS 245	Peri Ven Disease		VAS 366	Circ Probs	E			
	VAS 335	Radio Vas Anat		VAS 375	Abd Sono				
				HUM Elec	Hum elective				
Spr	VAS 211	Vas Prin Inst II		VAS 367	Cerebro Disease		VAS 420	Extern	R
	VAS	Patient	I	VAS	Vas Lab				

	225	Mgmt	E	385	Mgmt				
	VAS 246	Peri Art Disease		VAS 388	Extern Orient				
	WRI 227	Tech Report		COM Elec	COM elective				
	Soc Sci	Soc Sci elective		HUM Elec	HUM elective				

A3, SLO#9,: Course Matrix