

# 2016-17 Program Assessment Report

# **Civil Engineering B.S.**

# **Mission, Objectives & Learning Outcomes**

#### **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

The program mission of preparing students for professional practice is aligned with the University's emphasis on applied degree programs and application of knowledge in the workplace (Core Theme 1). While not explicitly described in the program mission, the emphasis on hands-on learning environments (Core Theme 2) is a cornerstone of the civil engineering program with a significant number of lab-based courses.

#### **Program Mission**

The mission of the Bachelor of Science in Civil Engineering (BSCE) program at Oregon Institute of Technology is to prepare students for professional practice. To be prepared to practice as professionals, engineers must be able to act responsibly and ethically, understand their limits and the limits of the tools they use, communicate effectively, work well in teams, and, amid the changing landscape of the field of civil engineering, be able to pursue graduate level education.

#### **Program Educational Objectives**

- practice in civil engineering or a related field
- pursue advanced or continuing education in civil engineering or a related field
- act as responsible, effective, and ethical citizens
- communicate effectively
- collaborate effectively

#### **Program Faculty Review**

Faculty reviewed outcomes September 2016 at the convocation retreat. It was decided that the department would reflect on our prior programmatic assessment during the 2016-2017 academic year given our successful ABET visit last year and looming changes to ABET outcomes a-k. Adjustments will likely be made when ABET makes their changes.

#### **Showcase Learning Opportunities**

A multi-disciplinary freshman course sequence introduces students to the disciplines of civil, electrical, and renewable energy engineering in the first term and uses a design-build-test multi-disciplinary team project to encourage effective communication and team participation in support of a full-scale real-world design project.

A co-taught course called Oregon Bridges was piloted in the summer and fall of 2016 to eight students. The course had a field component, which consisted of a 9-day tour of over 50 Oregon bridges along the coast and in the Portland area. A historian and a civil engineering faculty member engaged students in discussions of Oregon and transportation history, professional engineering practice, and bridge construction and preservation technology. The class visited with bridge historians, preservation and inspection staff at ODOT, and bridge construction experts during the field component. The primary deliverable for students was a portfolio of bridges visited on the trip and reflection on the evolution of bridges and designs resulting from details of time and place.

The capstone design project utilized a local design problem involving a confluence of irrigation water delivery, rail, road, and utilities. Students designed a replacement and construction phasing for the C-flume, an aging raised aqueduct in the Klamath Basin.

The department has a strong set of extracurricular opportunities driven by our active student chapters:

- The American Society of Civil Engineers Associated General Contractors (ASCE-AGC) -Participation in ASCE and AGC leadership meetings, conferences, and competitions; plans to host the ASCE Pacific Northwest Student Conference in April 2018
- The Institute of Transportation Engineers (ITE) Traffic Bowl, Transportation Research Board trip to Washington, D.C.
- Engineers Without Borders (EWB) Water delivery project in Tanzania, Africa

# **Program History & Vision**

#### **Program History**

The Civil Engineering Department at Oregon Institute of Technology administers a Bachelor of Science in Civil Engineering (BSCE) degree. This degree is accredited by the Engineering Accreditation Commission of ABET, Inc.

#### Meeting with Advisory Board

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

#### **Advisory Board Review**

The Advisory Board reviewed the Program Mission and Objectives during the academic year.

The department's industrial advisory council met May 26, 2017 and reviewed the mission and objectives. No changes were made.

#### **Advisory Board Meeting Minutes**

#### Attachment 1\_IAC\_5\_26\_17

#### **Program Enrollment**

Program enrollment has remained relatively steady at 110-120 students. Enrollment in 2012 was high given a particularly large junior cohort. Enrollment in 2014 was lower likely due to turnover in the admissions office and the resulting fewer recruiting events and mailings. The current enrollment trend is positive, but enrollments are likely remain fairly steady at around 115.

#### Attachment 2\_Enrollment\_5\_Year\_History\_by\_Major

#### **Program Graduates**

Program graduation numbers have fluctuated between 14 and 29 over the past 10 years. Admission rates, retention rates, and stop-out reporting are all conducted in an attempt to identify sources of students stopping out. While this is inherently challenging to predict or control, the department continues to make an effort to staff recruiting events and retain freshmen and transfer students through quality teaching and classroom engagement.

#### Attachment 3\_Graduates\_10\_Year\_History\_by\_Major

#### **Employment Rates and Salaries**

The median salary for 2014-2016 graduates was \$51,540 with a high salary of \$70,176 for an MSCE graduate and a low of \$43,000. Placements ranged from small, local engineering design firms to state departments of transportation to national and international design and construction firms in all sub disciplines of civil engineering.

#### Attachment 4\_Grad\_Data\_First\_Destination\_3\_Year\_History\_by\_Major

#### Pass Rates on Board and Licensure Exam

The pass rate for the 2016-2017 cohort was 83% (18/21 students passing), well above the civil engineering national average of 68% (https://ncees.org/engineering/fe/).

Results of Board or Licensure Exam  $\ensuremath{\mathsf{N/A}}$ 

**Other Program Assessment Data** N/A

**Desired Data** N/A

# **Closing the Loop**

# Describe any actions taken and re-assessment done during this academic year in response to assessment findings from prior academic years.

Program Faculty implemented actions during the academic year based on assessment findings from previous assessment cycles.

Changes Implemented N/A

Assessment Findings N/A

# **Program Student Learning Outcomes Assessment Cycle**

PROGRAM STUDENT LEARNING OUTCOMES 3-Year Cycle	2016-17	2017-18	2018-19
<b>Civil Engineering B.S. Degree Completion</b>			
OIT-BCE 2016-17.a An ability to apply knowledge of			
mathematics, science, and engineering.			
OIT-BCE 2016-17.b An ability to design and conduct experiments, as well as to analyze and interpret data.			
OIT-BCE 2016-17.c An ability to design a system,			
component, or process to meet desired needs within			
realistic constraints such as economic, environmental,			
social, political, ethical, health and safety,			
manufacturability, and sustainability.			
OIT-BCE 2016-17.d An ability to function on multi-			
disciplinary teams.			
OIT-BCE 2016-17.e An ability to identify, formulate, and			
solve engineering problems.			
OIT-BCE 2016-17.f An understanding of professional and			
ethical responsibility as well as the importance of			
professional licensure.			
OIT-BCE 2016-17.g An ability to communicate effectively.			

OIT-BCE 2016-17.h The broad education necessary to understand the impact of engineering solutions in a global and societal context.		
OIT-BCE 2016-17.i A recognition of the need for, and an ability to engage in life-long learning.		
OIT-BCE 2016-17.j A knowledge of contemporary issues.		
OIT-BCE 2016-17.k An ability to use the techniques, skill, and modern engineering tools necessary for engineering practice.		
OIT-BCE 2016-17.I An ability to explain basic concepts in management, business, public policy, and leadership.		
OIT-BCE 2016-17.m An ability to evaluate concepts and ideas from alternative perspectives.		

# **Assessment Map & Measure**

F – Foundation – introduction of the learning outcome, typically at the lower-division level,

P – Practicing – reinforcement and elaboration of the learning outcome, or

C – Capstone – demonstration of the learning outcome at the target level for the degree

For each outcome, programs should identify at least 2 direct measures (student work that provides evidence of their knowledge and skills), and 1 indirect measure (student self-assessment of their knowledge and skills) for each outcome.

For every program, data from the Student Exit Survey will be an indirect measure at the capstone level.

N/A

# **Analysis of Results**

N/A

## References

Program Assessment Coordinator: Charles C.J. Riley, Associate Professor, Civil Engineering

**Office of Academic Excellence** 

# Civil Engineering Industrial Advisory Council May 26, 2017 Meeting Minutes

Attendees: Sean St. Clair, CJ Riley, Erin Cox, David Thaemert, Roger Lindgren, DeLanie Cutsforth, Mark Willrett, Neal Spoon, Amanda Warner Thorpe, Scott Beaird, Anders Rasmussen Students: Jordan Preston, Noah Nieman, Ryan Brooks, Elizabeth Sheehy, Daniel Iwicki

Brian Leach Design Resource Laboratory

- Want to recognize Brian Leach/legacy
- Open computation and work space for students
- This new space will be brought in with the new Cornett renovation
- Concept and floor plans have been drawn up
- Need some outside funding, great opportunity for matching funds

Faculty Search

- 2 year long search
- Brought 4 candidates to campus again this year, large candidate pool
- Erin Cox has agreed to join full time
- Erin is passionate about teaching and brings unique experiences
- Also hopes to pursue PhD at PSU

State of the University

- Good year in terms of accreditation
- ETM is hiring 13 new faculty, 4 are replacement positions, 9 are new positions
- Robust growth in both ETM/HAS
- \$129,000 was allocated to ETM for equipment/update grants
- Executive staff transition has been significant, new president, new provost, hopefully new dean to follow

Update on Students

- Enrollment
  - o As of Fall 2016, 115 CE students, upward trend. 9 Graduate students
  - Retaining students for a fifth year.
  - o Nationally, CE degrees are on the decline
- Scholarships
  - Gwen Jones and Jordan Preston won WTS. Gwen won international scholarship.
  - NITC awarded Sam Lozano, Jordan Preston and Jason Millar scholarships, Kevin Baker and Jordan Preston also received other scholarships.
- Faculty and student awards
  - Ryan Kelly won Pride of OIT
  - o Jason Millar won Outstanding Student
  - o Sam Lozano won a Tech Award.

- 3 out of 8 awards going to CE students.
- Placement of Graduates
  - Placement rate is great
  - High quality of jobs
  - 0 Of students who completed survey 100% had job placement
- Graduate Program
  - 4 current seniors intend to complete master's program
- Student Tours
  - NITC funded a multitude of trips
    - Albuquerque, San Francisco, Oregon Bridges Class/Tour, Washington DC, Los Angeles, Boise, San Diego

# Cornett Hall Remodel

- Original concept was started 3 years ago
- Phase 1 starting June 19<sup>th</sup>
- Had to do a lot of hatching due to budget concerns
- Every lab will have its own separate access
- Engineering building has moved all over campus
- Needs approval by the state

## Senior Project

- Different this year
- C-flume project
- Four groups of students, independent of each other
- The firm already had data collected, so students came up with solutions
- Got a lot of local press
- Student groups all came up with relatively same solution

Faculty and Council Member Updates

- Roger co-authored recent project, successful. Leading multiple student chapter activities. Proposal approved, Matthew and CJ has proposals pending
- CJ has 40K education grant that incorporated iPod accelerometers to look at bridge dynamics in the field. Was given 74K to continue that work, proposal is to continue that work further and include video.
- Matthew has a small NITC grant to evaluate ash. Research fine aggregate that creates a firm and stable surface. Also got tenure!
- Anders moved to a new office and got approve to hire intern
- Delanie is currently lead hydraulic engineer in the region and is mentoring
- Erin was hired full time and taking PE exam in the fall
- Sean hadn't been able to dive into research as intended. Been travelling at least once a month for various roles. Program chair for CE division with ASEE. On national board of directors for ASCE. Zone 4 chair, western region, FE design committee, NCEES committee.

- David is finishing first year as faculty senate president. Was on the presidential search committee and taking on another year with faculty senate. EWB is returning to Tanzania.
- Scott has hired two graduates which are majority female
- Amanda got her masters and moved to Portland and got promoted.

# EWB, ITE, ASCE/AGC, EHS

- EHS submitted TBP proposal, second oldest honor society in US
  - Recommended accepted without condition
  - Initiation will be a big to-do
- ASCE/AGC built pedestrian bridge with Lost River, building bunkbeds for gospel mission.
  - Steel bridge got 6<sup>th</sup> out of 16
  - Concrete canoe got 11<sup>th</sup> out of 15
  - OIT is hosting next year
- EWB has started soil samples and water diversion project in Tanzania
  - Will provide water to 20,000 people.
- ITE has 27 active members, steady increase and lots of travel

Oregon TECH

Majors History, Fall 4th Week November 30, 2016

The following data represents majors declared by student as of Fall 4th week. Students with multiple/dual majors have been reported under each major in which they enrolled; therefore the student headcount will be duplicated. A small number of students that declared a third major have now been included in this report. Data reported is combined for all levels and all locations.

5 Year	5 Year
Difference	% Change
1	-
3	-
-10	-90.9%
17	- 10 5%
-o -36	-19.5%
1	-
-15	-100.0%
15	11.0%
-9	-7.1%
-6 60	-100.0%
-15	-27.3%
-19	-23.2%
-24	-10.6%
26	30.2%
1	100.0% 5.8%
, 121	159.2%
-35	-52.2%
33	137.5%
34	-
-1	-3.4%
-/ Q10	-14.3% 125 7%
-1	-100.0%
-6	-46.2%
-19	-38.8%
18	-
25	-
38	-
1	100.0%
114	-
-7	-87.5%
-71	-78.0%
-30	-51.7%
-37	-00.5%
-28	-21.7%
10	-
146	70.2%
-41 17	-28.3%
86	-
-1	-100.0%
-13	-40.6%
3	8.8%
-21	-38.9%
2	4.3%
19	38.0%
9	14.8%
3	-
3 _1/	- _72 70/
-14 31	-/5./%
2	-
-14	-22.6%
-47	-17.2%
27	-
22	39.3%
-111	-100.0%
-2	-18.2%
-12	-7.3%
56	50.9%
32	37.6%
25	- 9.6%
2	-
2	-
1	-
0	-
20 20	- 197 5%
10	11.4%
1,225	29.5%
1,231	30.8%

Total (Unduplicated)	4,001	4,414	4,273	4,786	5,232
Total (Duplicated)	4,146	4,539	4,407	4,923	5,371
Vascular Technology	88	95	80	93	98
Technology and Management	16	30	43	46	46
System Engr & Technical Mgmt	0	0	2	3	0
Specialization Travel/Tourism	0	1	0	0	0
Specialization in Marketing	0	0	1	1	1
Specialization in Accounting	0	0	0	2	2
Spec in Entrepreneur/Small Bus	0	0	0	1	2
Software Engineering Tech	260	268	289	309	285
Sleep Health-Polysom Tech Opt	0	0	4	6	17
Respiratory Care	85	84	88	103	117
Renewable Energy Engineering	110	206	203	180	166
Radiologic Science	164	163	154	160	152
Pre-Respiratory Care	11	12	8	11	9
Pre-Renewable Energy Eng	111	0	0	0	0
Pre-Paramedic Education	0	3	3	7	0
Pre-Nursing	56	60	53	69	78
Pre-Medical Lab Science	0	0	0	0	27
Pre-Medical Imaging Tech	273	287	253	237	226
Pre-Dental Hygiene	62	65	35	37	48
Pre-Clinical Lab Science	0	8	1	20	2
Population Health Management	0	0	3	24	31
Polysomnographic Technology	19	13		12	5
Picture Archive/Comm Sys Spec	0	0	1	2	3
Ontical Engineering	0	0	3	3	, , , , , , , , , , , , , , , , , , , ,
Operations Management	61	66	65	69	70
Nursing	50	49	52	61	69

# **Oregon TECH**

10 Year History By Major and Degree Type As of September 5, 2016

## **Specializations**

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Picture Archive/Comm Sys Spec	-	-	-	-	-	-	4	4	3	-
Specialization in Accounting	-	-	-	-	-	-	-	1	-	-
Specialization in Marketing	-	-	-	-	-	-	-	2	-	-
Total	0	0	0	0	0	0	4	7	3	0

#### Certificates

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Accounting Certificate	-	-	-	-	-	-	-	-	-	-
Dispute Resolution Certificate	1	2	1	2	4	1	6	11	1	2
Marketing Certificate	-	-	-	-	-	-	-	-	-	-
Polysomnographic Technology	-	-	4	14	13	11	8	6	3	9
Total	1	2	5	16	17	12	14	17	4	11

# Associates

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Associate of Arts	13	8	2	5	-	1	-	-	1	1
Computer Engineering Tech	7	5	3	2	3	-	5	7	6	6
Dental Hygiene	25	26	22	25	18	27	18	23	21	9
Electronics Engineering Tech	3	1	2	1	-	-	-	-	-	-
EMT - Paramedic	19	21	22	25	27	17	28	26	26	29
Office Systems Technology	-	2	2	-	-	-	-	-	-	-
Polysomnographic Technology	-	-	1	2	3	5	6	2	4	-
Respiratory Care	23	16	15	17	-	-	-	-	-	-
Sleep Health-Polysom Tech Opt	-	-	-	-	-	-	-	-	-	3
Software Engineering Tech	7	2	3	2	2	-	-	2	9	2
Total	97	81	72	79	53	50	57	60	67	50

#### **Bachelors**

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Allied Health Management	-	-	-	1	2	4	3	2	1	-
Applied Environmental Science	1	-	-	-	-	-	-	-	-	-
Applied Mathematics	-	-	7	1	5	4	7	4	4	5
Applied Psychology	46	42	37	30	36	38	30	40	37	31
Biology	10	6	16	14	11	11	3	4	1	2
Biology-Health Sciences	-	-	-	-	-	-	10	14	20	18
Civil Engineering	23	23	29	28	20	14	23	17	15	25
Clinical Laboratory Science	23	24	24	22	22	35	27	34	49	46
Communication Studies	13	13	9	10	13	8	19	13	4	8
Computer Engineering Tech	15	7	14	8	13	3	4	3	3	3
Dental Hygiene	35	38	45	55	49	54	51	76	62	65
Diagnostic Medical Sonography	21	24	21	27	29	24	19	31	25	24
Echocardiography	6	4	16	9	21	32	31	32	29	35
Electrical Engineering	-	-	-	6	11	9	11	17	17	26
Electronics Engineering Tech	18	17	13	10	18	16	11	10	10	13

Bachelors										
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Embedded Systems Eng Tech	-	-	-	1	2	2	4	1	5	3
Emergency Medical Services Mgt	-	-	-	-	-	-	-	-	-	1
Environmental Sciences	1	1	3	1	5	5	4	5	11	14
Geomatics	10	8	5	5	1	-	-	-	-	
Geomatics-option in GIS	-	-	2	1	1	3	3	5	1	2
Geomatics-option in Surveying	-	-	1	11	13	14	10	13	1	12
Health Care Mgmt-Admin Mgmt	-	-	-	-	-	-	-	-	1	2
Health Care Mgmt-Clinical Mgmt	-	-	-	-	-	-	-	-	1	-
Health Sciences	1	3	2	2	2	6	1	1	-	-
Industrial Management	-	-	-	1	-	-	-	-	-	-
Information Technology	4	4	1	2	-	1	-	-	-	
IT Accounting Option	-	1	2	1	1	2	1	2	-	-
IT Applications Dev Opt	8	5	13	5	6	8	21	12	8	11
IT Bus/Systems Analysis Opt	1	1	4	10	12	6	12	14	13	8
IT Health Informatics Opt	-	-	-	-	2	4	9	6	14	7
Management Information System	12	2	8	3	-	2	-	-	-	-
Manufacturing Engineering Tech	30	15	16	18	18	9	13	5	11	12
Mechanical Engineering	3	3	17	12	11	19	14	27	23	45
Mechanical Engineering Tech	31	19	31	23	24	19	24	18	17	21
Mgmt Info Sys/Mgmt Acc Option	-	3	-		-	-	-	-	-	-
Mgmt/Accounting Option	8	4	3	8	4	9	9	12	5	8
Mgmt/Marketing Option	9	7	5	5	7	8	7	4	7	7
Mgmt/Small Bus Mgmt Option	9	11	11	18	8	6	8	12	4	7
Nuclear Medicine Technology	18	18	16	15	16	16	15	14	14	15
Operations Management	8	6	3	15	7	14	16	13	19	18
Optical Engineering	-	-	-	-	-	-	-	-	1	1
Population Health Management	-	-	-	-	-	-	-	-	-	5
Radiologic Science	47	51	50	53	51	50	48	55	45	56
Renewable Energy Engineering	-	-	6	9	29	35	60	35	29	29
Renewable Energy Systems	-	-	1	-	-	-	-	-	-	-
Respiratory Care	5	8	6	7	10	21	21	21	27	22
Software Engineering Tech	44	36	27	27	31	29	41	31	35	47
System Engr & Technical Mgmt	-	-	-	-	-	-	-	-	-	3
Technology and Management	-	-	-	-	-	-	1	1	11	8
Ultrasound/Diag Med Sono Opt	1	-	-	-	-	-	-	-	-	-
Ultrasound/Vascular Option	1	-	-	-	-	-	-	-	-	-
Vascular Technology	30	30	26	23	23	25	21	28	19	24
Total	492	434	490	497	534	565	612	632	599	689

#### Masters

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Civil Engineering	-	-	-	-	-	-	-	-	2	6
Manufacturing Engineering Tech	3	4	7	2	6	8	12	4	8	9
Renewable Energy Engineering	-	-	-	-	-	-	-	1	11	9
Total	3	4	7	2	6	8	12	5	21	24

# **Grand Total**

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Grand Total	593	521	574	594	610	635	699	721	694	774

## Attachment 4\_Grad\_Data\_First\_Destination\_3\_Year\_History\_by\_Major

Oregon Tech Graduate Outco	Oregon Tech Graduate Outcome Data													
a=2013/2014/2015 combined	% Emp	oloyed	% Conti	nuing Ed	% Looking	for Work	% Not I	Looking	Succe	ess Rate	Median	Salary		
b=2014/2015/2016 combined	а	b	а	b	а	b	а	b	а	b	а	b		
% among those reporting outcomes	83.3	87.6	6.1	6.7	9.4	4.9	1.2	0.8	90.6	95.1	\$ 54,000	\$ 56,000		
Biology-Health Sciences	36	38	60	62	4	0	0	0	96	100	\$ 20,750	\$ 33,000		
Civil Engineering	83	92	11	8	6	0	0	0	94	100	\$ 50,000	\$ 51,540		
Communication Studies	60	67	13	11	27	22	0	0	73	78	\$ 27,000	\$ 28,500		
Computer Engineering Technology	89	93	0	0	0	0	11	7	100	100	\$ 63,000	\$ 64,000		
Dental Hygiene	86	96	4	1	9	2	1	1	91	98	\$ 53,000	\$ 57,500		
Diagnostic Medical Sonography	97	98	3	2	0	0	0	0	100	100	\$ 60,000	\$ 60,868		
Echocardiography	95	93	0	3	5	3	0	0	95	97	\$ 60,500	\$ 64,000		
Electrical Engineering	87	83	0	10	13	7	0	0	87	93	\$ 60,000	\$ 60,000		
Electronics Engineering Technology	73	82	7	5	20	14	0	0	80	86	\$ 54,250	\$ 66,750		
Embedded Systems Engineering Tech	80	83	0	17	20	0	0	0	80	100	\$ 58,250	\$ 60,000		
EMT/Paramedic	100	100	0	0	0	0	0	0	100	100	\$ 48,000	\$ 52,000		
Environmental Sciences	67	76	11	18	22	6	0	0	78	94	\$ 39,800	\$ 40,000		
Geomatics: GIS	100	100	0	0	0	0	0	0	100	100	\$ 42,000	\$ 42,000		
Geomatics: Surveying	69	64	0	9	31	27	0	0	69	77	\$ 40,500	\$ 43,000		
Health Care Management	75	80	25	20	0	0	0	0	100	100	\$ 52,000	na		
Health Informatics	75	79	10	11	15	11	0	0	85	89	\$ 53,000	\$ 52,000		
Information Technology	84	88	0	2	16	10	0	0	84	90	\$ 55,000	\$ 55,000		
Management: Accounting	78	83	6	6	17	11	0	0	83	89	\$ 32,000	\$ 32,250		
Management: SmBus/Entrepreneurs	77	87	15	13	8	0	0	0	92	100	\$ 33,000	\$ 40,900		
Management: Marketing	82	93	0	0	18	7	0	0	82	93	\$ 39,250	\$ 48,500		
Manufacturing Engineering Technolo	77	85	5	4	13	11	0	0	87	89	\$ 62,500	\$ 60,000		
Mathematics, Applied	60	71	20	29	0	0	20	0	100	100	na	na		
Mechanical Engineering	71	82	12	9	10	5	7	4	90	95	\$ 60,000	\$ 60,000		
Mechanical Engineering Technology	86	100	7	0	7	0	0	0	93	100	\$ 60,000	\$ 62,500		
Medical Laboratory Science	100	100	0	0	0	0	0	0	100	100	\$ 53,750	\$ 55,000		
Nuclear Medicine Technology	87	86	0	3	13	11	0	0	87	89	\$ 57,000	\$ 57,846		
Nursing														
Operations Management	83	83	11	14	6	3	0	0	94	97	\$ 63,000	\$ 63,000		
Polysomnographic Technology	83	100	0	0	17	0	0	0	83	100	\$ 50,000	\$ 40,500		
Population Health Management	na	75	na	25	na	0	na	0	na	100	na	\$ 42,000		
Psychology, Applied	54	66	24	26	15	5	6	3	85	95	\$ 30,000	\$ 30,000		
Radiologic Science	92	97	1	0	6	3	1	1	94	97	\$ 47,000	\$ 50,000		
Renewable Energy Engineering	76	83	6	8	18	9	0	0	82	91	\$ 57,000	\$ 56,500		
Respiratory Care	97	98	0	0	3	2	0	0	97	98	\$ 56,000	\$ 56,000		
Software Engineering Technology	93	91	0	0	3	7	3	3	97	93	\$ 62,250	\$ 66,750		
Technology and Management	100	88	0	0	0	12	0	0	100	88	na	na		
Vascular Technology	92	91	0	0	8	9	0	0	92	91	\$ 64,602	\$ 62,000		

#### Additional Notes:

Numbers may not add to 100 due to rounding

na=not reported, or not available due to small sample size

METHODOLOGY

Sample Frame 2016: 781 degrees awarded per FAST

Survey Response Rate: 49% Total Knowledge Rate 2016: 75%

Sources: Data collected from a variety of sources. Below, for 2016, in chronological order:

Grad Fair paper survey

Faculty senior exit survey

Career Services survey

Career Services followup with non-respondents

Faculty information from their contact with students

LinkedIn Profiles

Salaries of \$2,500 and below and \$250,000 and above were deleted.

Students with dual majors are included under each major

Known Outcomes 2016: 587

Known Outcomes 2013/2014/2015 combined N=1008

Known Outcomes 2014/2015/2016 combined N=1244