2015-16 Embedded Systems Engineering Technology B.S. Report

INTRODUCTION

Program History

The Embedded Systems Engineering Technology (ESET) program was proposed to OUS in spring of 2006 and approved in August, 2006. The curriculum for the ESET program is common with the hardware and software programs for the freshman year. The sophomore year of the ESET program has been constructed to mirror the track through both the Computer Engineering Technology (CET) and Software Engineering Technology (SET) programs, called the Concurrent Degree program. The ESET program junior year is when ESET students get instruction specific to topics of embedded systems engineering. These courses were taught for the first time in fall, 2008 on the Klamath Falls campus and soon after at the Wilsonville location. The full program is now offered to students at both locations. Current enrollment at the Klamath location is 24 students and 11 in Wilsonville for a total of 35 students [1]. There were three graduates of the ESET program in 2015-16 [2].

[1] Oregon Tech Institutional Research Fall 2015 4th http://www.oit.edu/faculty-staff/institutional-research/majors-reports
[2] Oregon Tech Institutional Research Completions Report http://www.oit.edu/faculty-staff/institutional-research/degree-data

Program Enrollment

The enrollment of students at both locations is slowly increasing. We have been concentrating on building this program for the last few years and expect the enrollment to start growing faster soon. Overall we are experiencing an uptrend [3].

[3] Oregon_Tech_Institutional_Research_Fall_2015_4th_week_Enrollment_Report.pdf

Program Graduates

Graduation trends have been fairly flat for the last few years. As we grow enrollment this trend should start growing.
Oregon_Tech_Institutional_Research_Completions_Report.pdf

Employment Rates and Salaries
Career Services Graduate Success Survey (http://www.oit.edu/career-services/graduate-success?link=graduate-success)

The 2013-2015 graduation survey for Oregon Tech shows a high rate of placement and salaries.
2013 – 2015 Graduation Survey

Program	Job Placement	Median Salary
ESET	80%	$58,250

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Pass Rates on Board or Licensure Exams

If applicable, include pass rates for current cohort and comparisons to national pass rates.

N/A

PROGRAM MISSION, OBJECTIVES AND LEARNING OUTCOMES

Program Mission

The mission of the Embedded Systems Engineering Technology (ESET) Degree program within the Computer Systems Engineering Technology (CSET) Department at Oregon Institute of Technology is to prepare our students for productive careers in industry and government by providing an excellent education incorporating industry-relevant, applied laboratory based instruction in both the theory and application of embedded systems engineering. Our focus is educating students to meet the growing workforce demand in Oregon and elsewhere for graduates prepared in both hardware and software aspects of embedded systems. Major components of the ESET program's mission in the CSET Department are:

I. To educate a new generation of Embedded Systems Engineering Technology students to meet current and future industrial challenges and emerging embedded systems engineering trends.
II. To promote a sense of scholarship, leadership, and professional service among our graduates.
III. To enable our students to create, develop, apply, and disseminate knowledge within the embedded systems development environment.
IV. To expose our students to cross-disciplinary educational programs.
V. To provide government and high tech industry employers with graduates in embedded systems engineering and related professions.

Program Educational Objectives

The Program Educational Objectives reflect those attributes a student of the ESET program will practice in professional endeavors.

A. Graduates of the embedded program are expected to understand societal impact of embedded systems and technological solutions.
B. Graduates of embedded degree program are expected to do hardware/software co-design for embedded systems. Graduates will continue to develop skills in analysis, approach, optimization, and implementation of embedded systems.
C. Graduates of the embedded program are expected to obtain the knowledge, skills and capabilities necessary for immediate employment in embedded systems. Embedded Systems is a profession increasingly driven by advances in technology, therefore graduates are expected to obtain the necessary life-long learning skills to enable them to be able to adapt to a changing environment.
D. Graduates of the embedded program are expected to develop a broad base of skills. These skills will prepare them for professional practice: 1) as embedded engineers, 2) participants in embedded development teams, and 3) effective communicators within a multidisciplinary team.

E. Graduates of the embedded program are expected to acquire knowledge of management and marketing of embedded projects and products and to prepare for series production.

Program mission and objectives were reviewed by advisory board in the current academic year. (Yes)

Advisory Board Review of Program Mission and Objectives

The Computer Systems Engineering Technology Department Industrial Advisory Board met spring term and amongst other things reviewed and affirmed the Embedded Engineering Technology program mission and objectives.

Advisory Board Meeting Minutes
Attach Advisory Board Meeting Minutes

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Essential Student Learning Outcomes

Identifier	Description
OIT-ESLO.1	Oregon Tech students will communicate effectively orally and in writing.
OIT-ESLO.2	Oregon Tech students will engage in a process of inquiry and analysis.
OIT-ESLO.3	Oregon Tech students will make and defend reasonable ethical judgments.
OIT-ESLO.4	Oregon Tech students will collaborate effectively in teams or groups.
OIT-ESLO.5	Oregon Tech students will demonstrate quantitative literacy.
OIT-ESLO.6	Oregon Tech students will explore diverse perspectives.

Program Student Learning Outcomes

Identifier	Description
ABET-ETAC-2015.GC.3.B.a	an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
ABET-ETAC-2015.GC.3.B.b	an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
ABET-ETAC-2015.GC.3.B.c	an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
ABET-ETAC-2015.GC.3.B.d	an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
ABET-ETAC-2015.GC.3.B.e	an ability to function effectively as a member or leader on a technical team;
ABET-ETAC-2015.GC.3.B.f	an ability to identify, analyze, and solve broadly-defined engineering technology problems;

ABET-ETAC-2015.GC.3.B.g	an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
ABET-ETAC-2015.GC.3.B.h	an understanding of the need for and an ability to engage in self-directed continuing professional development;
ABET-ETAC-2015.GC.3.B.i	an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
ABET-ETAC-2015.GC.3.B.j	a knowledge of the impact of engineering technology solutions in a societal and global context; and
ABET-ETAC-2015.GC.3.B.k	a commitment to quality, timeliness, and continuous improvement.

Program outcomes were reviewed by program faculty in the current academic year. (Yes)

Faculty Review of Program Outcomes

Program faculty reviewed and affirmed the newly updated program outcomes during the fall assessment meeting for the department held during Oregon Tech's Convocation.

Program Assessment Meeting Minutes

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Program Alignment to Oregon Tech Mission and Core Themes

CURRICULUM MAP

F – Foundation
P – Practice
C – Capstone

Program Curriculum Map

	CST 371	**CST 373**	**CST 412**
ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;		P	
ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;	P		C
ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.		P	

	CST 422	CST 432	Student Exit Survey
ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;		C	C
ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;			C
ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.		C	C

Cycle of Assessment for Program Outcomes

Year	Outcomes
15-16	A, D, I, K
16-17	B, E, G, J
17-18	C, F, H

ASSESSMENT MAP

Program Assessment Map

Legend	P - Practice
Course/Event	CST 371
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measure	Direct - Project—Group
Criterion	Junior Project Teams should be able to score a 75% or better on rubric
Attachments	

Legend	P - Practice
Course/Event	CST 373
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measure	Direct - Project--Group
Criterion	The JP teams should be able to score an average above 70% on the rubric
Attachments	

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Legend	P - Practice
Course/Event	CST 373
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measure	Direct - Project—Group
Criterion	Junior Project teams should be able to score a 80% or better on rubric
Attachments	

Legend	C - Capstone
Course/Event	CST 412
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measure	Direct - Senior Project
Criterion	Senior Project students should be able to score a 90% or better on rubric
Attachments	

Legend	C - Capstone
Course/Event	CST 432
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measure	Direct - Senior Project
Criterion	Seniors should be able to score an average o85% or greater on the rubric
Attachments	

Legend	C - Capstone
Course/Event	CST 432
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measure	Direct - Senior Project
Criterion	Senior Project students should be able to score a 90% or better on rubric
Attachments	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measure	Indirect - Student Exit Survey
Criterion	80% of students respond with a 3 or 4 on 4 point scale
Attachments	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measure	Indirect - Student Exit Survey
Criterion	80% of students respond with a 3 or 4 on 4 point scale
Attachments	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measure	Indirect - Student Exit Survey
Criterion	80% of students respond with a 3 or 4 on 4 point scale
Attachments	

SUMMARY OF ASSESSMENT ACTIVITIES

Program Assessment Findings for the Assessment Measure level

Legend	P - Practice
Course/Event	CST 371
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measures	Direct - Project—Group
Criterion	Has the criterion Junior Project Teams should be able to score a 75% or better on rubric been met yet? (Met)
Summary	The junior project class was selected for this assessment. This is the perfect class to see where our students are in a team based design aspect. This is a team based class so the assessment has mixed data with Computer Engineering Students. I left this data in as we were evaluating teams not individuals in this class. The second assessment for this section is senior project and will only include Embedded Systems students. Since we have changed all of our student outcomes we cannot compare this data to previous reports.
Attachments of the Assessments	*[4] CST_371___Embedded_Systems_Developement_I__Fall_15_.pdf*
Improvement Narratives	

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Legend	P - Practice
Course/Event	CST 373
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measures	Direct - Project—Group
Criterion	Has the criterion The JP teams should be able to score an average above 70% on the rubric been met yet? (Met)
Summary	The junior project class was selected for this assessment. This is the perfect class to see where our students are in a team based design aspect. This is a team based class so the assessment has mixed data with Computer Engineering Students. I left this data in as we were evaluating teams not individuals in this class. The second assessment for this section is senior project and will only include Embedded Systems students. Since we have changed all of our student outcomes we cannot compare this data to previous reports.
Attachments of the Assessments	
Improvement Narratives	

Legend	P - Practice
Course/Event	CST 373
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measures	Direct - Project—Group
Criterion	Has the criterion Junior Project teams should be able to score a 80% or better on rubric been met yet? (Met)
Summary	The junior project class was selected for this assessment. This is the perfect class to see where our students are in a team based design aspect. This is a team based class so the assessment has mixed data with Computer Engineering Students. I left this data in as we were evaluating teams not individuals in this class. The second assessment for this section is senior project and will only include Embedded Systems students. Since we have changed all of our student outcomes we cannot compare this data to previous reports.
Attachments of the Assessments	
Improvement Narratives	

Legend	C - Capstone
Course/Event	CST 412
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measures	Direct - Senior Project
Criterion	Has the criterion Senior Project students should be able to score a 90% or better on rubric been met yet? (Met)
Summary	This is the second direct assessment for criterion d. The second class chosen was senior project. This is an individual project class. Since it is individual I only show the data for Embedded Systems students.
Attachments of the Assessments	*[5] CST_412___Senior_Project_I__fall_2015_.pdf*
Improvement Narratives	

Legend	C - Capstone
Course/Event	CST 432
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measures	Direct - Senior Project
Criterion	Has the criterion Seniors should be able to score an average o85% or greater on the rubric been met yet? (Met)
Summary	Senior project was the second direct assessment done for this criterion. This is our final capstone project and the whole project was evaluated.
Attachments of the Assessments	
Improvement Narratives	- Curriculum Change: Need to split ESET out from software senior project. This is being implemented in the next year.

Legend	C - Capstone
Course/Event	CST 432
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measures	Direct - Senior Project
Criterion	Has the criterion Senior Project students should be able to score a 90% or better on rubric been met yet? (Met)
Summary	This is the second direct assessment for this criterion. Senior project is the ideal place as this is the final capstone class. As we have changed all previous criteria and classes they are evaluated in we cannot compare to previous years data.
Attachments of the Assessments	
Improvement Narratives	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.a an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
Assessment Measures	Indirect - Student Exit Survey
Criterion	Has the criterion 80% of students respond with a 3 or 4 on 4 point scale been met yet? (Met)
Summary	5 seniors responded to exit survey. No marks were below a 3. All felt that their Oregon Tech education prepared them for this outcome.
Attachments of the Assessments	*[6] BS_Embedded_Report_Senior_Survey.pdf*
Improvement Narratives	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.d an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
Assessment Measures	Indirect - Student Exit Survey
Criterion	Has the criterion 80% of students respond with a 3 or 4 on 4 point scale been met yet? (Met)
Summary	5 seniors responded to exit survey. No marks were below a 3. All felt that their Oregon Tech education prepared them for this outcome.
Attachments of the Assessments	*[6] BS_Embedded_Report_Senior_Survey.pdf*
Improvement Narratives	

Legend	C - Capstone
Course/Event	Student Exit Survey
Standard/Outcome	ABET-ETAC-2015.GC.3.B.k a commitment to quality, timeliness, and continuous improvement.
Assessment Measures	Indirect - Student Exit Survey
Criterion	Has the criterion 80% of students respond with a 3 or 4 on 4 point scale been met yet? (Met)
Summary	5 seniors responded to exit survey. No marks were below a 3. All felt that their Oregon Tech education prepared them for this outcome.
Attachments of the Assessments	*[6] BS_Embedded_Report_Senior_Survey.pdf*
Improvement Narratives	

BS Embedded Report

2015-16 CSET Senior Exit Survey

October 18th 2016, 3:27 pm PDT

Q58 - Please indicate your level of agreement with the following statements.

With respect to my discipline (Computer, Software and/or Embedded Engineering Technology as appropriate), the degree program has provided me with:

Question	Strongly Disagree		Disagree		Agree		Strongly Agree		Total
an ability to select and apply the knowledge, techniques, skills, and modern tools of my discipline to engineering technology problems and activities.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	0.00%	0	0.00%	0	60.00%	3	40.00%	2	5
an ability to design systems, components, or processes for engineering technology problems.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
an ability to function effectively as a member or leader on a technical team.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to identify, analyze, and solve engineering technology problems.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to apply written, oral, and graphical communication in both	0.00%	0	0.00%	0	60.00%	3	40.00%	2	5

technical and non-technical environments; and an ability to identify and use appropriate technical literature.									
an understanding of the need for and an ability to engage in self-directed continuing professional development.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
a knowledge of the impact of engineering technology solutions in a societal and global context.	0.00%	0	0.00%	0	80.00%	4	20.00%	1	5
a commitment to quality, timeliness, and continuous improvement.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5

[4]

CST 412 – Senior Project I (Fall 2015)

Rubric: CSET Designing a System, Component or Process Rubric

	High Proficiency (4 pts)	Proficient (3 pts)	Developing Proficiency (2 pts)	Limited/No Proficiency (1 pts)	*Mean*	*Mode*	*Stdev*
Identify critical elements of the design	4	0	0	0	4.000	4.000	0.000
Create a detailed design specification addressing each of the identified critical design elements	2	2	0	0	3.500	3.000	0.500
Generate an implementable solution for each of the identified critical design elements	2	2	0	0	3.500	3.000	0.500

Identify critical elements of the design	4 (100%)			
Create a detailed design specification addressing each of the identified critical design elements	2 (50%)	2 (50%)		
Generate an implementable solution for each of the identified critical design elements	2 (50%)	2 (50%)		

CST 371 – Embedded System Development I (Fall 2015)

Rubric: CSET Designing a System, Component or Process Rubric

	High Proficiency (4 pts)	Proficient (3 pts)	Developing Proficiency (2 pts)	Limited/No Proficiency (1 pts)	*Mean*	*Mode*	*Stdev*
Identify critical elements of the design	0	8	0	0	3.000	3.000	0.000
Create a detailed design specification addressing each of the identified critical design elements	8	0	0	0	4.000	4.000	0.000
Generate an implementable solution for each of the identified critical design elements	4	4	0	0	3.500	3.000	0.500

Identify critical elements of the design	8 (100%)
Create a detailed design specification addressing each of the identified critical design elements	8 (100%)
Generate an implementable solution for each of the identified critical design elements	4 (50%) 4 (50%)

High Proficiency | Proficient | Developing Proficiency | Limited/No Proficiency

Oregon TECH

Headcount by Major and Student Type (Fall 2015, 4th Week)
December 1, 2015

Notes:
(1) The Following report includes double majors; therefore the headcount is duplicated for dual majors.
(2) Majors that begin with * have been phased out but still have students enrolled (Legacy Major Codes)
(3) The student location is based on the campus code assigned to the student; however students can take courses at multiple locations simultaneously (eg : Klamath Falls + Online) or move to a different location.

	Freshman	Sophomore	Junior	Senior	Post-Bac UG	Graduate Master	Non-Admitted UG	Non-Admitted GR	Grand Total
Arts & Sciences	**71**	**77**	**108**	**142**	**11**	**2**	**1,027**	**1**	**1,439**
Klamath	**69**	**71**	**104**	**131**	**9**		**46**		**430**
*Biology				1					1
Applied Mathematics	5	2	15	12			2		36
Applied Psychology	5	9	29	32					75
Biology-Health Sciences	39	28	26	38	3		3		137
Communication Studies	2	7	14	21	1		1		46
Environmental Sciences	6	14	6	19	1		2		48
General Studies	12	7	2		3		35		59
Population Health Management		4	11	5	1		1		22
Dispute Resolution Certificate			1	3					4
Applied Behavior Analysis							2		2
Online Learning		**4**	**3**	**10**	**2**		**67**		**86**
Applied Psychology		4	2	10	1				17
General Studies					1		67		68
Population Health Management			1						1
Seattle							**6**		**6**
General Studies							6		6
Wilsonville	**2**	**2**	**1**	**1**		**1**	**18**		**25**
Applied Mathematics							5		5
Applied Psychology	2		1	1					4
Biology-Health Sciences							1		1
Communication Studies							1		1
General Studies		2					9		11
Applied Behavior Analysis						1	2		3
Other / High School							**886**		**886**
General Studies							886		886
Joint Program						**1**	**3**	**1**	**5**
Applied Behavior Analysis						1	3	1	5
(blank)							**1**		**1**
General Studies							1		1
Engineering	**199**	**244**	**280**	**634**	**114**	**60**	**47**		**1,578**
Klamath	**166**	**182**	**182**	**301**	**15**	**16**	**7**		**869**
*Civil Engineering				1					1
Civil Engineering	18	13	31	44	3	8	1		118
Computer Engineering Tech	30	17	9	20			2		78
Electrical Engineering	8	15	15	26	1		1		66
Electronics Engineering Tech	1		1						2
Embedded Systems Eng Tech	4	9	4	7					24
Geomatics-option in GIS	2	1		5	1				9
Geomatics-option in Surveying	3	7	3	13	2				28
Manufacturing Engineering Tech	3	5	11	17	1	7			44
Mechanical Engineering	42	46	47	73	2				210
Mechanical Engineering Tech	9	9	9	12	3	1	1		44
Renewable Energy Engineering	9	12	17	24					62
Software Engineering Tech	33	47	35	58	2		2		177
Information Technology	4	1		1					6
Online Learning	**2**	**5**	**5**	**10**	**1**				**23**
*Information Technology	1								1
Information Technology	1	5	5	10	1				22

	Freshman	Sophomore	Junior	Senior	Post-Bac UG	Graduate Master	Non-Admitted UG	Non-Admitted GR	Grand Total
Seattle	**2**	**3**	**9**	**50**	**38**	**15**	**27**		**144**
Manufacturing Engineering Tech			2	8	1	14	9		34
Mechanical Engineering	2	3	7	37	35	1	15		100
Mechanical Engineering Tech				5	2		3		10
Wilsonville	**29**	**54**	**84**	**273**	**60**	**29**	**13**		**542**
Civil Engineering				1					1
Computer Engineering Tech	2		2	4					8
Electrical Engineering	6	11	18	50	7	1	5		98
Electronics Engineering Tech		3	3	26	3				35
Embedded Systems Eng Tech	3		1	6	1				11
Geomatics-option in GIS			1						1
Geomatics-option in Surveying			1	2					3
Manufacturing Engineering Tech	2	1	3	17	2	2	2		29
Mechanical Engineering		3	2	4			4		13
Mechanical Engineering Tech	5	2	7	49	4				67
Renewable Energy Engineering	2	9	12	47	22	26			118
Software Engineering Tech	9	19	27	55	20		1		131
Information Technology		6	7	12	1		1		27
Health	**172**	**208**	**219**	**639**	**116**		**64**		**1,418**
Chemeketa		**8**	**8**	**38**	**4**				**58**
Dental Hygiene		8	8	38	4				58
Klamath	**148**	**166**	**171**	**290**	**33**		**16**		**824**
*Health Sciences				1					1
Clinical Lab Science-Earlyadm	1	3	2	2					8
Dental Hygiene		8	16	36	7				67
Diagnostic Medical Sonography		14	19	48	3				84
Echocardiography		12	12	30	4				58
Nuclear Medicine Technology		9	15	24					48
Pre-Clinical Lab Science	2	1		1					4
Pre-Dental Hygiene	9	7	5	1			8		30
Pre-Medical Imaging Tech	103	47	19	8	6		5		188
Pre-Nursing	31	22	9	3			2		67
Pre-Paramedic Education							1		1
Pre-Respiratory Care	2	5	2		1				10
Radiologic Science		17	41	77	5				140
Respiratory Care		9	19	28	3				59
Vascular Technology		10	12	29	4				55
MIT Applicant		2							2
Picture Archive/Comm Sys Spec				2					2
LaGrande		**4**	**3**	**14**	**4**				**25**
Dental Hygiene		4	3	14	4				25
Online Learning	**3**	**7**	**11**	**238**	**13**		**42**		**314**
*Polysomnographic Technology		1							1
Dental Hygiene				71					71
Diagnostic Medical Sonography				17	1				18
Echocardiography			4	49	4		7		64
Polysomnographic Technology	2	1		4	3		1		11
Pre-Dental Hygiene							6		6
Pre-Medical Imaging Tech	1	2	4	1	3		26		37
Radiologic Science				18					18
Respiratory Care				42	1		1		44
Vascular Technology		2	3	32			1		38
Sleep Health-Polysom Tech Opt		1		4	1				6
Wilsonville	**21**	**23**	**26**	**59**	**62**		**6**		**197**
Clinical Lab Science-Earlyadm	2	3	5	3	1				14
Clinical Laboratory Science			4	38	53				95
EMT - Paramedic	1	7	8	7	5				28
Pre-Clinical Lab Science	3	3	6	2	2				16
Pre-Dental Hygiene	1								1
Pre-Medical Imaging Tech	6	6							12
Pre-Nursing	2								2
Pre-Paramedic Education	1	2		1			2		6

	Freshman	Sophomore	Junior	Senior	Post-Bac UG	Graduate Master	Non-Admitted UG	Non-Admitted GR	Grand Total
Pre-Respiratory Care	1								1
Radiologic Science				2					2
Emergency Medical Services	4	2	3	6	1		4		20
Management	**16**	**37**	**91**	**254**	**12**		**8**		**418**
Klamath	**13**	**23**	**50**	**83**	**2**		**5**		**176**
Health Care Mgmt-Admin Mgmt	2		8	9					19
Health Care Mgmt-Clinical Mgmt				1					1
Mgmt/Accounting Option	2	3	7	14	1		5		32
Mgmt/Marketing Option	3	6	11	14					34
Mgmt/Small Bus Mgmt Option	3	5	14	13					35
Operations Management		1	8	10	1				20
Technology and Management	1								1
Specialization in Marketing				1					1
Spec in Entrepreneur/Small Bus		1							1
Health Informatics	1	1	1	2					5
*IT Health Informatics Opt			1	5					6
*IT Bus/Systems Analysis Opt	1	3		6					10
*IT Accounting Option				1					1
*IT Applications Dev Opt		2		6					8
Specialization in Accounting		1		1					2
Online Learning	**2**	**5**	**24**	**90**	**6**				**127**
*Allied Health Management				2					2
Health Care Mgmt-Clinical Mgmt			4	6					10
Health Care Mgmt-Rad Science				11	1				12
Mgmt/Small Bus Mgmt Option				1					1
Operations Management	1	3	6	14	1				25
Technology and Management			7	22					29
Health Informatics		2	3	3					8
*IT Health Informatics Opt			1	6					7
*IT Bus/Systems Analysis Opt			1	13	2				16
*IT Applications Dev Opt	1		2	12	2				17
Seattle				**1**			**3**		**4**
Operations Management				1			2		3
Technology and Management							1		1
Wilsonville	**1**	**9**	**17**	**80**	**4**				**111**
Mgmt/Small Bus Mgmt Option			1						1
Operations Management	1	2	3	15					21
Technology and Management		3	2	10					15
Health Informatics			3	4					7
*IT Health Informatics Opt			3	14	2				19
*IT Bus/Systems Analysis Opt		1	3	19	2				25
*IT Applications Dev Opt		3	2	18					23
Nursing OHSU	**11**	**11**	**23**	**15**	**1**				**61**
Klamath	**11**	**11**	**23**	**15**	**1**				**61**
Nursing	11	11	23	15	1				61
Grand Total	**469**	**577**	**721**	**1,684**	**254**	**62**	**1,146**	**1**	**4,914**

Unduplicated Total	**464**	**563**	**695**	**1,611**	**252**	**55**	**1,145**	**1**	**4,786**

BS Embedded Report

2015-16 CSET Senior Exit Survey

October 18th 2016, 3:27 pm PDT

Q58 - Please indicate your level of agreement with the following statements.

With respect to my discipline (Computer, Software and/or Embedded Engineering Technology as appropriate), the degree program has provided me with:

Question	Strongly Disagree		Disagree		Agree		Strongly Agree		Total
an ability to select and apply the knowledge, techniques, skills, and modern tools of my discipline to engineering technology problems and activities.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	0.00%	0	0.00%	0	60.00%	3	40.00%	2	5
an ability to design systems, components, or processes for engineering technology problems.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
an ability to function effectively as a member or leader on a technical team.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to identify, analyze, and solve engineering technology problems.	0.00%	0	0.00%	0	20.00%	1	80.00%	4	5
an ability to apply written, oral, and graphical communication in both	0.00%	0	0.00%	0	60.00%	3	40.00%	2	5

technical and non-technical environments; and an ability to identify and use appropriate technical literature.									
an understanding of the need for and an ability to engage in self-directed continuing professional development.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5
a knowledge of the impact of engineering technology solutions in a societal and global context.	0.00%	0	0.00%	0	80.00%	4	20.00%	1	5
a commitment to quality, timeliness, and continuous improvement.	0.00%	0	0.00%	0	40.00%	2	60.00%	3	5