Oregon TECH

2017-18 Program Assessment Report

Computer Engineering Technology 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

Our program is very hands-on and thus aligns with Core Theme 1. Our graduates are in high demand by the industries we support. This is evidence that we are aligned with Core Theme 2.

Program Mission

The mission of the Computer Engineering Technology (CET) Degree program in the Computer Systems Engineering Technology (CSET) Department at Oregon Institute of Technology is to provide an excellent education incorporating industry-relevant, applied laboratory based design and analysis to our students. The program is to serve a constituency consisting of its Alumni, employers in the high-technology industry, and the members of our IAB. Major components of the CET program's mission in the CSET Department are to:

1. Educate computer engineering technology students to meet current and future industrial challenges,

2. Promote a sense of scholarship, leadership, and professional service among our graduates,

3. Enable our students to create, develop, and disseminate knowledge for the applied engineering environment,

4. Expose our students to cross-disciplinary educational programs, and provide high tech industry employers with graduates in the computer engineering technology profession, a profession which is increasingly being driven by advances in technology.

Program Educational Objectives

Graduates of the Computer Engineering Technology (CET) Bachelor Degree program may be employed in a wide range of high tech industries from industrial manufacturing to consumer electronics where they will be involved in solving problems through the development of hardware, software and embedded applications. Graduates may be involved in product design, testing and qualification, application engineering, customer support, sales, or public relations.

A) Demonstrate technical competency through success in computer engineering technology positions and/or pursuit of engineering or engineering technology graduate studies if desired.

B) Demonstrate competencies in communication and teamwork skills by assuming increasing levels of responsibility and/or leadership or managerial roles.

C) Develop professionally, pursue continued learning and practice responsibly and ethically.

Program Faculty Review

Program Student Learning Outcomes and Objectives were reviewed by program faculty during Fall Convocation Program Assessment Meeting. No changes were made.

At the end of the 2017-2018 school year, Claude Kansaku retired and Harika Manem left Oregon Tech. During the same school year, George Drouant was hired as a replacement for Claude Kansaku and Pramod Govindan was hired as a replacement for Harika Manem.

Showcase Learning Opportunities

In 2017-2018 school year, the CET program continued participating in the MECOP program. In the MECOP program, students participate in two 6-month internships. Many other students who do not participate in MECOP find internships on their own.

In the 2017-2018 school year, the CET program also decided to change the senior year sequence. CST 464 was deleted since it was outdated. In order to balance student and faculty workload, CST 442 was moved from winter to spring, CST 344 from fall to winter, and CST 418 from winter to fall. Please see **Attachment 11 Program Revisions.**

Program History & Vision

Program History

In 1965, OIT was invited to join a Technical Education consortium sponsored by a number of major computer manufacturers. In response, OIT developed an Electro-Mechanical Engineering Technology program. This program was based on a mix of existing EET, MET, Math and other support courses. The name of the program was changed to Computer Systems Engineering Technology in 1973 in order to better represent the course material and capabilities of graduates. Course offerings were expanded, refined and renumbered using CST prefixes to reflect their computer systems content. Since that time, the program has continued to evolve in order to track new developments in the field and keep graduates current. As of this time, the program is only offered on the Klamath Falls campus. The program has continuously evolved as industrial changes have warranted.

Meeting with Advisory Board

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

Advisory Board Review

The IAB Meeting was held on The meeting was held on Meeting was held on May 18th

at 8 AM -10 AM in PV 147.

Program Enrollment

Enrollment at the beginning of the year was 62 students. The 5 year change is -24.39%.

Attachment_1_Enrollment_5_Year_History_by_Major

Program Graduates

We had three graduates this year. Graduates have remained flat for the last five years.

Attachment_2_Graduates_10_Year_History_by_Major

Employment Rates and Salaries

100% of our graduates have found employment with a median salary of $64,000.

Attachment_3_Grad_Data_First_Destination_3_Year_History_by_Major

Pass Rates on Board and Licensure Exam

N/A

Results of Board or Licensure Exam

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.

Since the last school year, we have made changes to the assessment process. All courses to be assessed are now pre-defined in the assessment cycle. Instead of choosing a course to assess each cycle, the same courses will always be used. This will also mean that each cycle will utilize the same assignment and instructor for consistency between assessments. Please reference the PSLO Assessment cycle below.

The previous assessment data did not separate Computer Engineering Technology (CET) and Embedded Systems Engineering Technology (ESET) students. The report this year is now separated by major.

For the previous cycle (2016-2017), data for **OIT-BCMP 2016-17.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), indicated that students struggled with 'writing reports in such a way that hardware and software explanations were sufficient for the reader to recreate'. An additional item was assessed in CST 374 for Spring 2018. Please see *Attachment 10.*

Changes Implemented

We have created pre-defined assessment cycles as noted in the PSLO Assessment Cycle chart below, and data from CET and ESET are now separated by major. Assessment items are now permanently attached to the classes and instructors listed in the PSLO Assessment Cycle chart below.

Assessment Findings

For the previous cycle (2016-2017) reassessment mentioned above, the illustrates that by junior year, students are able to meet the OIT-BCMP 2016-17g. learning outcome.

Program Student Learning Outcomes Assessment Cycle

Program Student Learning Outcomes 3-year cycle Computer Engineering Technology B.S.	2017-18	2018-19	2019-20
OIT-BCMP 2016-17.a An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;		371 471	
OIT-BCMP 2016-17.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;	**231 351**		
OIT-BCMP 2016-17.c An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;	**372 337**		
OIT-BCMP 2016-17.d An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;		471 371	
OIT-BCMP 2016-17.e An ability to function effectively as a member or leader on a technical team;		372 373	
OIT-BCMP 2016-17.f An ability to identify, analyze, and solve broadly-defined engineering technology problems;	**373 471**		
OIT-BCMP 2016-17.g An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to to identify and use appropriate technical literature.			471 371
OIT-BCMP 2016-17.h An understanding of the need for and an ability to engage in self-directed continuing professional development;			372 473
OIT-BCMP 2016-17.i An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;			372 472
OIT-BCMP 2016-17.j A knowledge of the impact of engineering technology solutions in a societal and global context;			372 473

| OIT-BCMP 2016-17.k A commitment to quality, timeliness, and continuous improvement. | | **372** **473** | |

Assessment Map and 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.

OIT-BCMP 2017-18.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;

Course/Event	CST 231
Legend	F- Foundation
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better

Course/Event	CST 351
Legend	P - Practicing
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better

Course/Event	Student Exit Survey
Legend	C - Capstone
Assessment Measure	Indirect – Student Exit Survey
Criterion	70% of students rate themselves as "proficient" or better

OIT-BCMP 2017-18.c An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;

Course/Event	CST 372
Legend	P- Practice
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better

Course/Event	CST 473
Legend	C- Capstone
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better

Course/Event	Student Exit Survey
Legend	C - Capstone
Assessment Measure	Indirect – Student Exit Survey
Criterion	70% of students rate themselves as "proficient" or better

OIT-BCMP 2016-17.f An ability to identify, analyze, and solve broadly-defined engineering technology problems;	
Course/Event	CST 373
Legend	P- Practice
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better
Course/Event	CST 471
Legend	C- Capstone
Assessment Measure	Direct – Assignment
Criterion	70% or more are proficient or better
Course/Event	Student Exit Survey
Legend	C - Capstone
Assessment Measure	Indirect – Student Exit Survey
Criterion	70% of students rate themselves as "proficient" or better

Analysis of Results

Data provided in this report indicates that the Program Student Learning Objectives are being met.

OIT-BCMP 2017-18.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;

Criterion	Met.
Summary	N/A
Improvement Narrative	Reassess during next cycle.
Attachments	*Attachment_4_CST231_Winter2018_Assessment* *Attachment_5_CST351_Spring2018_Assessment* *Attachment_12_Student_Exit_Survey*

OIT-BCMP 2017-18.c An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;

Criterion	Met
Summary	N/A
Improvement Narrative	Reassess during next cycle.
Attachments	*Attachment_6_CST372_Winter2018_Assessment* *Attachment_7_CST473_Spring2018_Assessment* *Attachment_12_Student_Exit_Survey*

OIT-BCMP 2016-17.f An ability to identify, analyze, and solve broadly-defined engineering technology problems;

Criterion	Met
Summary	N/A
Improvement Narrative	Reassess during next cycle.
Attachments	*Attachment_8_CST373_Winter2018_Assessment* *Attachment_9_CST471_Fall_2017_Assessment* *Attachment_12_Student_Exit_Survey*

References

Program Assessment Coordinator: Kevin Pintong, Assistant Professor, Computer Systems Engineering Technology

Michael Healy, Assistant Professor, Computer Engineering Technology

Office of Academic Excellence

Attachment_1_Enrollment_5_Year_History_by_Major

Oregon TECH

Computer Systems Eng Tech Headcount, Fall 4th Week
November 4, 2017
Student campus is based on location assigned to student; however students may enroll at other/multiple locations
Majors with asterisk (*) have been phased out
Dual Majors are reported under each separate major

	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
Computer Engineering Tech	82	81	86	63	62
Klamath Falls					
Full-Time	72	68	70	51	50
Part-Time	9	9	8	6	10
Wilsonville					
Full-Time		1	8	4	
Part-Time	1	3		2	2
Embedded Systems Eng Tech	25	32	35	57	57
Klamath Falls					
Full-Time	15	21	24	31	29
Part-Time	3	2		4	7
Wilsonville					
Full-Time	1	2	4	11	10
Part-Time	6	7	7	11	11
Software Engineering Tech	268	289	309	285	274
Klamath Falls					
Full-Time	152	145	154	124	126
Part-Time	17	28	24	23	31
Wilsonville					
Full-Time	37	53	47	63	51
Part-Time	62	63	84	75	66
Grand Total	375	402	430	405	393
Klamath Falls	268	273	280	239	253
Online	0	0	0	0	0
Wilsonville	107	129	150	166	140
Total	375	402	430	405	393

Attachment_2_Graduates_10_Year_History_by_Major

Bachelors

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Allied Health Management	-	1	2	4	3	2	1	-	-	-
Applied Mathematics	7	1	5	3	7	4	4	5	7	8
Applied Psychology	37	30	36	38	30	40	37	31	31	26
Biology	16	14	11	11	3	4	1	2	-	-
Biology-Health Sciences		-	-	-	10	14	20	18	28	18
Business Accounting Option	3	8	4	9	9	12	5	8	7	5
Business Management Option	11	18	8	6	8	12	4	7	6	5
Business Marketing Option	5	5	7	8	7	4	7	7	10	11
Civil Engineering	29	28	20	14	23	17	15	25	25	23
Clinical Laboratory Science	24	22	22	35	27	34	49	46	-	-
Computer Engineering Tech	14	8	13	3	4	3	3	3	6	3
Dental Hygiene	40	60	43	34	31	76	62	63	66	37
Diagnostic Medical Sonography	21	27	29	24	19	31	25	24	31	31
Echocardiography	16	9	21	32	31	32	29	35	30	29
Electrical Engineering	-	6	11	9	11	17	17	26	37	39
Electronics Engineering Tech	13	10	18	16	11	10	10	13	4	6
Embedded Systems Eng Tech	-	1	2	2	4	1	5	3	6	4

Attachment_3_Grad_Data_First_Destination_3_Year_History_by_Major

Oregon Tech Graduate Outcome Data

	% Employed		% Continuing Ed		% Seeking		% Not Seeking		Success Rate		Median Salary	
a=2014 / 2015 / 2016 combined	a	b	a	b	a	b	a	b	a	b	a	b
b=2015 / 2016 / 2017 combined												
% non-thre reporting outcomes	87.6	90.0	6.7	6.7	4.0	2.8	0.8	0.5	95.4	97.2	$ 56,000	$ 58,000
Computer Engineering Technology	93	100	0	0	0	0	7	0	100	100	$ 64,000	$ 64,000
Embedded Systems Engineering Technol	83	88	17	13	0	0	0	0	100	100	$ 60,000	$ 60,000

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 2017: 797 degrees awarded per FAST

Survey Response Rate: 60% Total Knowledge Rate 2016: 73%

Sources: Data collected from a variety of sources. Below, for 2017, 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

Known Outcomes 2017: 582

Western Region NACE data: from National Association of College and Employers, 2017

Term Name: Winter 2018

Course Code CST 231

PSLO: **OIT-BCMP 2017-18.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;

Assignment Name: Quiz 5

Type: Direct Assessment

Created By Kevin Pintong

Assessment Method: On quiz 5, students were asked to:

1. Generate a state machine diagram for UART transmitter with three stop bits, one parity bit, and 9 data bits using Mealy style outputs.
2. For the UART receiver, why is oversampling required, and how much should you oversample by?

Item	Quiz 5	ESET	CET
1	Identified one reason oversampling is required for UART receivers **such as clock jitter, skew, or asynchronous clocks between RX and TX.**	100%	89%
2	Identified that an oversampling **of 2x, 4x,8x, or 16x would work.**	100%	89%
3	Drew a state machine that implemented a UART transmitter. **Errors may include be wrong state machine type, wrong output on arc, or too many bits outputted, but may not exceed three errors.**	80%	78%

Successful performance criteria: 75% of students are able to answer or higher.

Students were rated on a binary scale.

0 = No answer provided, or unacceptable answer.

1 = Acceptable answer.

Term Name: Spring 2018

Course Code CST 351

PSLO: **OIT-BCMP 2017-18.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;

Assignment Name: Lab 2- XPT2046 touch screen controller

Type: Direct Assessment

Created By Kevin Pintong

Assessment Method: Students were asked to implement a controller in Verilog for the SPI based XPT2046 touch screen to extract data from the X and Y axes in 8-bit or 12-bit format. The data was to be output to groups of 8 or 12 LEDs for each axes.

1) Draw a block diagram of their system.

2) Explain their design in lab report format.

3) Demo the touch screen controller. The demo must have two axes output at the same time indicated by two groups of 8 or 12 LEDs.

Item	Lab 2	CET
1	Block diagram	7/9 (78%)
2	Explanation of design	8/9 (89%)
3	Successful demo	8/9 (89%)

Successful performance criteria: 75% of students are able to answer or higher.

0 = No answer provided, or unacceptable answer.

1 = Acceptable answer.

Term Name: Winter 2018

Course Code CST 372

PSLO: **OIT-BCMP 2017-18.c** An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;

Assignment Name: Refined Plan Document

Type: Direct Assessment

Created by: Michael Healy

Assessment Method:

Provide step-by-step test plans scoped by module or sub-module. Include module integration testing, and final product/project testing. Be detailed in your descriptions: Describe which characteristics and parameters are you testing. Describe the voltage and amperage boundaries of your tests. Describe the logical environmental extremes in terms of temperature, humidity, etc.

Assessment	Metric	ESET	CET
Assignment score	Average score on assignment	92.83	89.63
Performance Criteria	70% students proficient or higher	100%	100%
		6 of 6	8 of 8

Term Name: Spring 2018

Course Code CST 473

PSLO: **OIT-BCMP 2017-18.c** An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;

Assignment Name: Assurance Plan

Type: Direct Assessment

Created by: Kevin Pintong

Assessment Method:

Students were asked to write an assurance plan document, explaining how their software, hardware requirements were met. Two key items that are evaluated as part of this assessment are:

1) Explain what test was performed to verify that the system meets original stated requirements.

2) Provide traceability through identification of tools, serial numbers, and version numbers. Example : Quartus Prime version 123 or Tektronix MSO4034 S/N 12345ABC.

3) Identify areas of concerns and problems such as glitches in the system or unfinished portions of the project.

Successful performance criteria: 75% of students are able to answer or higher.

0 = No answer provided, or unacceptable answer.

1 = Acceptable answer.

Item	Assurance Plan	ESET	CET
1	Explain what test was performed to verify that the system meets original stated requirements.	3/3	3/3
2	Provide traceability through identification of tools, serial numbers, and version numbers.	3/3	3/3
3	Identify areas of concerns and problems such as glitches in the system or unfinished portions of the project.	3/3	3/3
	Total %	100%	100%

Term Name: Fall 2018

Course Code CST 373

PSLO: **OIT-BCMP 2016-17.f** An ability to identify, analyze, and solve broadly-defined engineering technology problems

Assignment Name: Design Improvement Paper

Type: Direct Assessment

Created by: Michael Healy

Assessment Method:

(Preamble) Choose a module of your project that includes both hardware and software aspects of design. Describe an improvement that includes schematics, data management, software changes, testing, analysis, purchasing and final implementation. Consider the impact on fabrication and practical usage of the improvement.

Assessment	Metric	ESET	CET
Assignment score	Average score on assignment	95.8	88.75
Performance Criteria	70% students proficient or higher	100%	100%
		6 of 6	8 of 8

Term Name: Fall 2017

Course Code CST 471

PSLO: **OIT-BCMP 2016-17.f** An ability to identify, analyze, and solve broadly-defined engineering technology problems;

Assignment Name: Requirements resubmission

Type: Direct Assessment

Created By Kevin Pintong

Assessment Method: Student was asked to submit requirements document. The requirements document needed to include ten or more SMART-based requirements. (Specific, Measureable, Acceptable, Realistic, and Time-bound.)

Students were assessed on whether:

- There were a sufficient number of requirements included (>10).
- Whether or not their requirements met SMART guidelines.
- How much more revision was needed to get submission to meet SMART guidelines.

Assessment Score:	Requirements Document	ESET	CET
Range 0 - 9	No submission or insufficient number of requirements (<10)	0	0
Range 10-19	Requirements need major work in quantity and quality. Requirements do not meet the S.M.A.R.T. guidelines.	0	0
Range 20-29	With major revisions, requirements could be used to build a product.	0	1
Range 30-39	With minor revisions, requirements could be used to build a product.	5	6
Range 40-50	Requirements are ready to build the design. All requirements are S.M.A.R.T.	0	0
Performance Criteria	75% students score 30 or higher.	100%	86%
		5 of 5	6 of 7

Note: This is a replacement assessment for the missing assessment from previous year.

Term Name: Fall 2017

Course Code CST 471

PSLO: **OIT-BCMP 2016-17.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

Assignment Name: Final Proposal

Type: Direct Assessment

Created By Kevin Pintong

Assessment Method: Student was asked to submit final report.

Students were assessed on whether the following items were included

Section	Possible
Title page	5
Signatory page	5
Abstract	10
Table of contents	5
Project management	10
Conceptual overview	15
System description	15
Requirements	20
Glossary	5
Appendix	5
References	5
	100

Performance Criteria- 75% students score 75% or higher.

Assessment Score:	Requirements Document	ESET	CET
Total score	Score greater than 75%	4/5 (80%)	8/9 (88%)

Request for Minor Program Revision Computer Engineering Technology (2018-2019)

Summary

1. Remove CST 464 from CET curriculum to remove outdated material.
2. CST 351 Digital Systems Design II requires a prerequisite that no longer exists. CST 232 was integrated into CST 231, but CST 232 is still listed as a requirement.
3. Change sequence of senior year courses listed in the table below. This change will balance workload for faculty and students.

Summary of requested changes and rationale

#	Change	Course Number	Course Name	Purpose	
	DELETE	Keep credits as Technical Elective (CST 3xx-4xx)	CST 464	RISC Based Microprocessor Systems	Course implementation is outdated and will not be updated.
	PREREQ CHANGE	Remove CST 232 as prerequisite	CST 351	Digital Systems Design II	Pre-requisite no longer exists.
3	TERM CHANGE	WINTER TO SPRING	CST 442	Advanced Computer Architecture	Move to balance workload.
	TERM CHANGE	FALL TO WINTER	CST 344	Intermediate Computer Architecture	Move to balance workload.
	TERM CHANGE	WINTER to FALL	CST 418	Data Communications and Networks	Move to balance workload.

Documentation from Other Departments

All changes are internal to the Computer Engineering Technology program.

Assessment/Accreditation Statement

The number of upper division credit hours will still be met. CST 464 (4cr) will be replaced with a CST 3xx-4xx technical elective (3-4cr), which will only reduce it by 1 cr. Our accrediting body, ABET ETAC does not require a CST 464 RISC Based Microprocessor Systems course.

Requirement	Current CET	Proposed CET
180 total credits for graduation	187	186
60 upper division credit	69	68

Financial Impact Statement

This proposal reduces Computer Engineering Technology program by 1 cr. No additional labs or equipment are required for this change.

Workload will be reduced by 5 units through removal of CST 464 For the particular faculty member who teaches CST 344, CST 418, CST 442, and CST 464, the loading will remain the same.

Faculty workload change and change in course sequence

Plan	Fall	Winter	Spring	Total WL units
Current	CST 344 (3)	CST 442 (3) CST 418 (3)	CST 464 (5)	14
Proposed	CST 418 (3)	CST 344 (3)	CST 442 (3) CST 120 (5)	14

Q BCMP 1 - Program Student Learning Outcomes for Computer Engineering Technology B.S. Please rate your proficiency in the following areas.
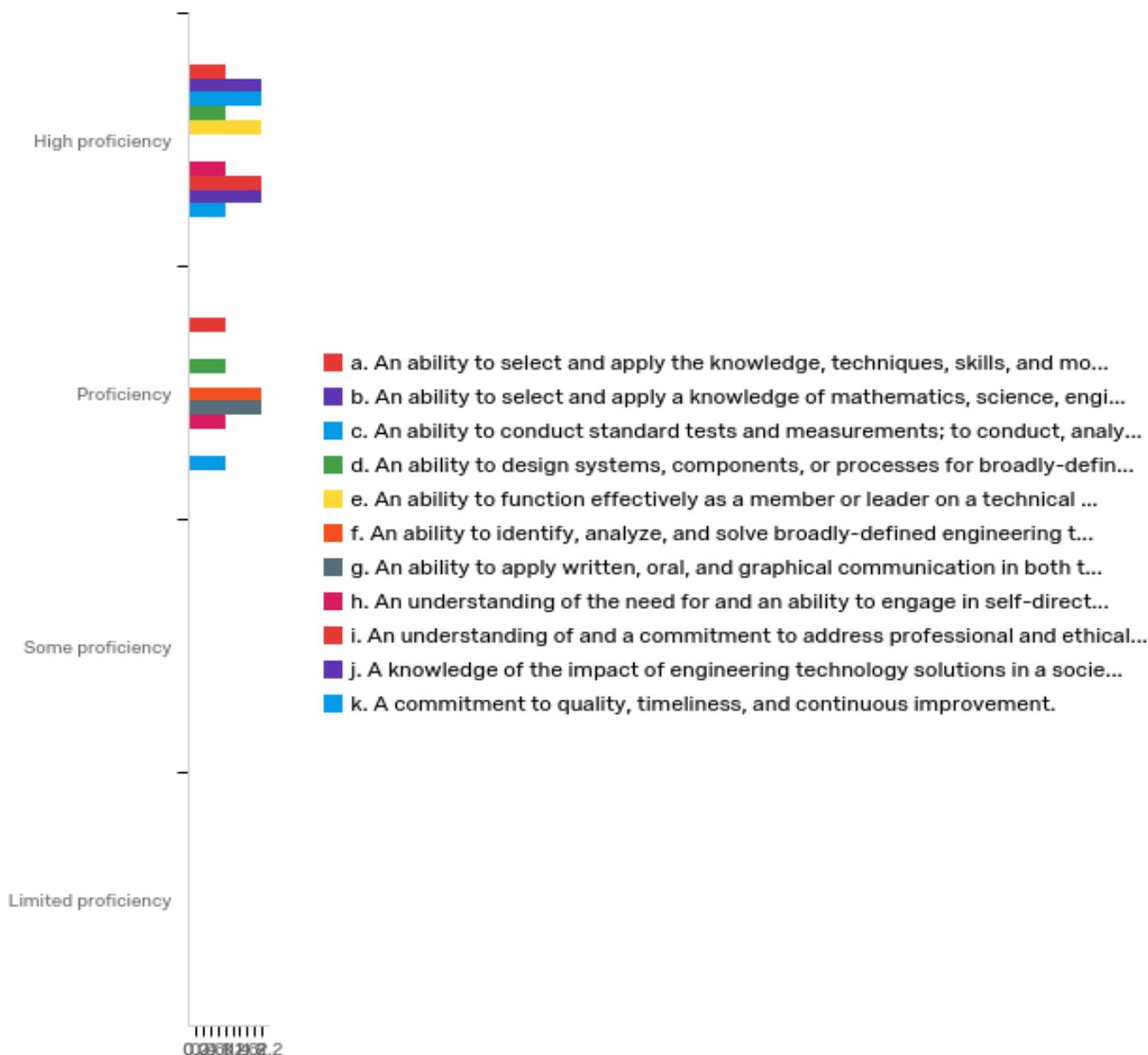
| #	Question	High proficiency		Proficiency		Some proficiency		Limited proficiency		Total
32	a. An ability to select and apply the knowledge,	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2

	techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.									
33	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.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
34	c. An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
35	d. An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2
36	e. An ability to function effectively as a member or	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2

	leader on a technical team.									
37	f. An ability to identify, analyze, and solve broadly-defined engineering technology problems.	0.00%	0	100.00%	2	0.00%	0	0.00%	0	2
38	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.	0.00%	0	100.00%	2	0.00%	0	0.00%	0	2
39	h. An understanding of the need for and an ability to engage in self-directed continuing professional development.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2
40	i. An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
41	j. A knowledge of the impact of engineering technology solutions in a societal and global context.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
42	k. A commitment to quality, timeliness, and continuous improvement.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2

Q BCMP 2 - Program Student Learning Outcomes for Computer Engineering Technology B.S. How much has your experience at Oregon Tech contributed to your knowledge, skills, and personal development in these areas?

100% Very much	0% Quite a bit	0% Some	0% Very little
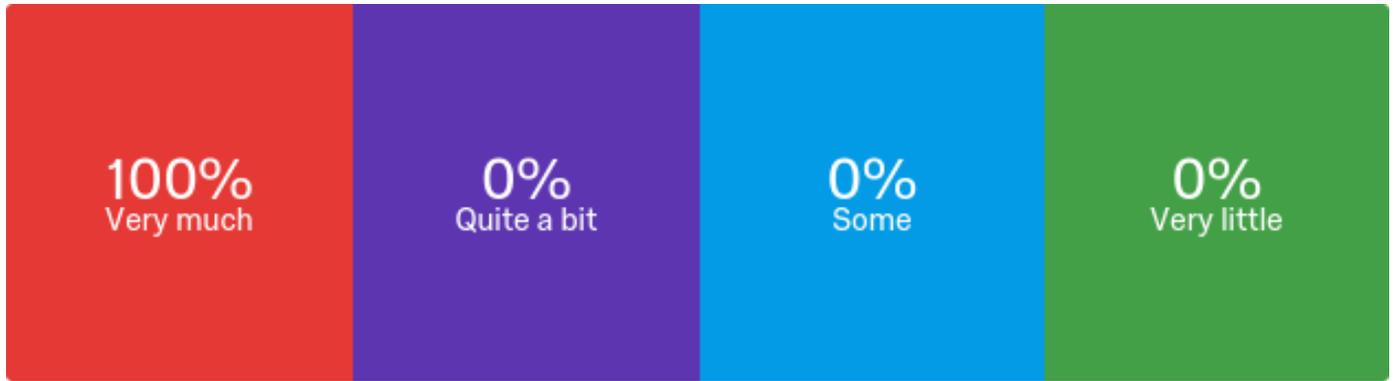
■ Very much   ■ Quite a bit   ■ Some   ■ Very little

#	Question	Very much		Quite a bit		Some		Very little		Total
32	a. An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
33	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.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
34	c. An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2
35	d. An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2

36	e. An ability to function effectively as a member or leader on a technical team.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
37	f. An ability to identify, analyze, and solve broadly-defined engineering technology problems.	50.00%	1	50.00%	1	0.00%	0	0.00%	0	2
38	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.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
39	h. An understanding of the need for and an ability to engage in self-directed continuing professional development.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
40	i. An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
41	j. A knowledge of the impact of engineering technology solutions in a societal and global context.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2
42	k. A commitment to quality, timeliness, and continuous improvement.	100.00%	2	0.00%	0	0.00%	0	0.00%	0	2