2019-2020 SET Assessment Report

1 Program Mission and Educational Objectives

The mission of the Software Engineering Technology (SET) Bachelor's Degree Program within 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 software engineering. The program is to serve a constituency consisting of our graduates, our employers and our Industrial Advisory Board. Major components of the SET Program's mission in the CSET Department are:

1. To educate a new generation of Software Engineering Technology students to meet current and future industrial challenges and emerging software trends;
2. To promote a sense of scholarship, leadership and professional service among our graduates;
3. To enable our students to create, develop, apply and disseminate knowledge within the field of software engineering;
4. To expose our students to cross-disciplinary educational programs;
5.

a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;

2) An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;

3) An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature

4) An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes an ability to identify, analyze, and solve broadly-defined engineering technology problems;

5) An ability to function effectively as a member as well as a leader on technical teams

4 Curriculum Map

The Bachelor of Science in Software Engineering Technology degree requires 187 credit hours as prescribed by the curriculum outline.

Curriculum

Required courses and recommended terms during which they should be taken:

Freshman
Year Fall

- CST 116 - C++ Programming I Credit Hours: 4
- CST 162 - Digital Logic I Credit Hours: 4
- MATH 111 - College Algebra Credit Hours: 4
- WRI 121 - English Composition Credit Hours: 3

Total: 15 Credit Hours

Winter

- CST 126 - C++ Programming II Credit Hours: 4
- CST 130 - Computer Organization Credit Hours: 3
- MATH 112 - Trigonometry Credit Hours: 4
- SPE 111 - Public Speaking Credit Hours: 3
- WRI 122 - Argumentative Writing Credit Hours: 3

Total: 17 Credit Hours

Spring

- CST 120 - Embedded C Credit Hours: 4
- CST 131 - Computer Architecture Credit Hours: 3
- CST 136 - Object-Oriented Programming with C++ Credit Hours: 4
- MATH 251 - Differential Calculus Credit Hours: 4

Total: 15 Credit Hours

Sophomore
Year Fall

- CST 250 - Computer Assembly Language Credit Hours: 4
- CST 276 - Software Design Patterns Credit Hours: 4
- MATH 252 - Integral Calculus Credit Hours: 4
- WRI 227 - Technical Report Writing Credit Hours: 3

Total: 15 Credit Hours

Winter

- CST 211 - Data Structures Credit Hours: 4
- CST 240 - Linux Programming Credit Hours: 4
- MATH 254 - Vector Calculus I Credit Hours: 4
- PSY 201 - Psychology Credit Hours: 3

Total: 15 Credit Hours

Spring

- CST 223 - Concepts of Programming Languages Credit Hours: 3
- CST 236 - Engineering for Quality Software Credit Hours: 4
- CST 238 - Graphical User Interface Programming Credit Hours: 4
- MATH 327 - Discrete Mathematics Credit Hours: 4

Total: 15 Credit Hours

CST 412 CST 415	Senior Development Project	X	X	X							X	

6.2 PSLO 3: A

8 Rubrics

8.1 PSLO 1 Rubric

ABET 1: An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline

Category: A	4 Highly Proficient	3 Proficient	2 Some Proficiency	1 Limited or no Proficiency	Score
Applies the knowledge, techniques, skills of Software Engineering Technology to solve broadly-defined engineering technology problems	Works independently to find and implement good solutions to technical problems	Can solve many technical problems, but their solutions are not always of highest quality	Has difficulty finding solutions to technical problems	Unable to solve many technical problems	
Selects appropriate modern tools of Software Engineering Technology	Is able to identify and use appropriate tools on their own	Requires assistance in choosing tools but is able to learn and use them on their own	Requires some assistance in both choosing and learning tools.	Highly dependent on others for tool choice and use	
Selects correct principles and applied procedures or methodologies to solve engineering problems	Selects correct principles, procedures, and methodologies and is able to explain why those choices are correct	Selects correct principles, procedures, and methodologies but is unclear as to why those choices are correct	Selects some of the correct principles, procedures, and methodologies	Shows little understanding of the principles necessary to solve engineering problems.	
Applies principles and applied procedures or methodologies to solve engineering problems	Can consistently apply procedures or methodologies and explain why each step is necessary and what each step accomplishes	Can consistently apply procedures or methodologies but isn't always sure why each step is necessary or what each step accomplishes	Inconsistently applies procedures or methodologies because they sometimes skip steps.	Unable to follow procedures or methodologies	

8.3 PSLO 3 Rubric

PSLO 3: An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.

For this rubric we have adopted Oregon Tech's communication ESLO rubric.

Essential Student Learning Outcome – Communication Rubric

Communiituniitu R-etc-13(/MCa-1)-63T4T(m)-33T4C /T-17(e)T3[illegible]

	• Communication medium (essay, memo, report, speech, etc.) matches purpose and audience. • Content is focused on a specific and appropriate organizing element: a thesis statement, purpose statement, or theme. • Content is organized so that ideas relate clearly to each other and to the organizing element. •		

	(academic citation style or disciplinary approach).		• The work does not meet academic citation or disciplinary standards.

- Students deliver content in spoken, written, or visual forms and media, as appropriate to context.
- Use of language (terminology and word choice, sentence structure, etc.) is clear and professional, demonstrating mastery of content and form.
- In written form, students demonstrate correct grammar, spelling, syntax, usage, and mechanics.
- In oral form, both verbal and nonverbal delivery demonstrate poise, preparation pstery

	The work *meets listed requirements* for this criterion; little to no development needed.	The work *meets most requirements*; minor development would improve the work.	The work needs moderate development in *multiple requirements.*	The work does not meet this criterion: it needs substantial development in *requirements.*
(where appropriate)	As appropriate to purpose and audience: • High quality visuals are employed to illustrate, contribute to, or develop content, and not for purely aesthetic appeal. • All visuals are appropriately introduced and interpreted. • All visuals are documented according to the appropriate conventions (academic citation style or disciplinary approach).	Examples: • Minor changes in content, organization, or appearance would enhance the visuals in the work. • Additional or more carefully-chosen visuals would improve the work. • Some (but a minority of) visuals in the work serve a purely aesthetic purpose, and relate only tangentially to the work's purpose and content. • Additional context and interpretation of visuals would improve the work. •		

8.4 PSLO 4 Rubric

CSET Conducting Standardized Tests

8.5 PSLO 5 Rubric

PSLO 5: An ability to function effectively as a member as well as a leader on technical teams.

For this criterion we have adopted Oregon Tech's Teamwork ESLO rubric.

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