



Academic Program	Mechanical Engineering
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The last comprehensive Program Review was the ABET Self-Study report which was prepared in July of 2019. The next comprehensive Program Review will be the ABET Self-Study report which will be prepared by July 1st of 2025. As part of the 2019 self-study report a comprehensive program review was made. ME program Student Outcomes, Assessment Process, and Assessment results are described in section 2 of this report.

B. Five-year Review Planning Goals Progress

Since the last comprehensive program review the most significant improvement plans directly impacting student learning outcomes have been: 1) Redesign of how information fluency/literacy is addressed in ME curriculum, and 2) Redesign of the overall assessment process in terms of the frequency and the number of courses assessed within the six-year ABET review period.

C. Program Changes and Needs

1. No changes to the curriculum.
- 2.

A. Program Student Learning Outcomes

All graduates receiving a Bachelor of Science in Mechanical Engineering degree from the Cal Maritime are expected to have:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The program Student Outcomes (SO) were revised in 2018 to follow the ABET revision to Criterion 3.

<https://www.csum.edu/web/academics/programs3>

B. Program Student Learning Outcome(s) Assessed

The student outcomes listed above were implemented in 2018. In AY 2018-2019, outcomes 1, 2, 3, and 6 were assessed. Each outcome is assessed once every two years. The outcomes are grouped so that roughly half of the outcomes are assessed on any given year. In AY 2019-20, outcomes 4, 5, and 7 will be assessed.

C. Summary of Assessment Process

Instructor Course Assessment (ICA) is the primary tool used to measure achievement of student outcomes. Student work is assessed to measure achievement of course outcomes, and the course outcomes are linked to the student outcomes by each instructor. The mapping of courses to student outcomes can be seen in the Tables below. The benchmark is considered being met by an average assessment of 3 or greater or 70% of the scores being 3 or greater. The results are presented to the department for evaluation. The findings of the AY2018-19 assessment are shown below.

D. Summary of Assessment Results

Table 1. Average Assessment Scores

Course	SO1	SO2	SO3	SO6
ME 339	3.89		4.00	3.99
ME 349	3.07		3.40	3.14
ME 350L	4.61		3.92	4.34

ME 360	4.40	4.52		4.52
ME 392	3.98			
ME 394	3.74	4.07		

Student Outcome 3: an ability to communicate effectively with a range of audiences

Previous Recommendations: N/A

Status of Previous Recommendations: N/A

_____ The six courses assessed all met the benchmark.

Faculty Recommendation: No further action is required at this time.

Student Outcome 6:

3. STATISTICAL DATA

Statistical data is meant to enhance and support program development decisions. These statistics will be attached to the Annual Report of the Program Unit. This statistical document will contain the same data as required for the five-year review including student demographics of majors, faculty and academic allocation, and course data.

<i>Program</i>	
<i>A. Students</i>	
1. Undergraduate	

2. Postbaccalaureate

