College of Engineering and Computer Science
Mechanical Engineering Department, E-100
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Program Performance Review (PPR)
Master of Science in Mechanical Engineering (MSME)
Department Response to PPR Reviewers' Report

This report is in response to the PPR Reviewers' Report that the Mechanical Engineering (ME) Department received on September 11, 2023. The reviewers were Dr. Travis Hu (Dept. of Mechanical Engineering, California State University, Los Angeles), Dr. April Si (Dept. of Aerospace, Industrial, and Mechanical Engineering, California Baptist University), Dr. Jalal Torabzadeh (Dept. of Mechanical and Aerospace Engineering, California State University, Long Beach) and Dr. Jidong Huang (Dept. of Electrical and Computer Engineering, California State University, Fullerton). The ME Department is grateful to the PPR Review Team for their day-long on-campus visit on May 17, 2023, and their thorough review of our MSME degree program to identify the program strengths, challenges, and recommendations.

Strengths

Some of the key strengths recognized by the PPR Review Team include the following:

- The program mission and goals are aligned well with the university mission, goals, and strategies in offering affordable graduate programs and providing quality teaching and research to mechanical engineering students.
- The PPR Review Team commended the ME Department and faculty commitment to our program and student success. They also recognized that our faculty are diverse, motivated, well-qualified, and enthusiastic.
- Introduction of new courses and opportunities to recruit and engage students in faculty research.
- A systematic and periodic assessment for the MSME degree program has been implemented.
- Future and strategic faculty hires for emerging mechanical engineering areas are clearly planned.

Challenges/Recommendations

The PPR Review Team also recognized our program has great potential for expansion and improvement. Some of the recommendations provided are given below (bold font), along with the department responses (italic font):

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- **The Program Education Objectives (PEO) 2 and 3 need to be clearly defined and not overlapped. More emphasis should be considered for alternative career paths for our students to find jobs in industry, academia, government agencies, and nonprofits at local, regional, national, and international levels.**

  Response: The ME Department has established a periodic review process for the PEOs involving all mechanical engineering constituents (e.g., current students, alums, advisory board/employers, and faculty) to ensure the PEOs meet the needs of program constituents. Based on the feedback from the PPR Review Team and the Fullerton Forward 2024-2029 Strategic Plan, the ME Department will initiate the PEOs review process in Spring 2024 to ensure they remain consistent with the university mission, vision, and values.

- **The number of bridge courses required (up to 15 units) for students from non-mechanical engineering backgrounds is on the higher side.**

  Response: The ME Department is considering changing the admission recommendation for graduate students with non-ME backgrounds. It is suggested that prospective graduate students should have the equivalent of EGCE 201 Statics, EGCE 302 Dynamics, EGME 304 Thermodynamics, and EGME 322L Introduction to Computer-Aided Design (SolidWorks) in addition to the mathematics and science requirements before admission.

- **The PPR Review Team suggested that the college or department find a way to provide faculty with some compensation, released time, or re-assigned time for supervising graduate students in thesis research or graduate projects and reduce the heavy teaching load (4 classes or 12 WTUs per semester).**

  Response: Providing graduate research opportunities to graduate students is critical to the success and growth of our MSME degree program. The current support system for faculty to engage graduate students in EGME 597 Graduate Projects or EGME 598 Graduate Thesis or lack thereof may present a limitation to the program's growth. The ME Department will work with the administration to develop a support model to encourage and promote faculty to work with graduate students on research.

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- **The PPR Review Team recommended that the program have appropriate assessment methods and quality control for the work of students enrolling in 400-level technical electives applicable for graduate credit.**

  Response: *In addition to the 500-level graduate classes, the ME Department will start to include 400-level technical elective courses applicable for graduate credit in the assessment of the student learning outcomes (SLOs) of our MSME degree program using the extra assignment that graduate students need to complete beyond that required of undergraduate students in the same course.*

- **For SLO 1: The direct assessment indicators do not meet the expected standards for both assessment cycles.**

  Response: *The ME Department will assess SLO 1 in more graduate classes to get a more holistic perspective on student attainment of their ability to apply advanced mathematics, science & engineering knowledge to identify, formulate, and solve advanced engineering problems. Our assessment thus far has focused on their ability to apply advanced mathematics. The ME Department will examine the use of videos covering the prerequisite knowledge in mathematics, science, and engineering to serve as the review and refresher course for our graduate students.*

- **It is recommended that a clear advising process and documentation be developed at the department level.**

  Response: *The ME Department acknowledges the tremendous effort that our graduate program advisor in mentoring our graduate students and guiding them to a successful graduation pathway. The ME Department continues to look for ways to improve our graduate advising process by examining the feasibility of implementing a similar mandatory and structured advising system used with our BSME undergraduate students.*

- **Prepare and provide students with a Graduate Student Handbook.**

  Response: *The ME Department is currently revising our Graduate Student Handbook.*

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- **Enhance a sense of community among graduate students.**

  Response: *The ME Department plans to hold mixer events/workshops to engage our MSME students better starting in Fall 2023.*

Conclusion

The ME Department is fully committed to continuously improving the MSME degree program and will strive for excellence. We will do our best to consider the recommendations to address the challenges the PPR Review Team identified. We appreciate the thoughtful, thorough, and constructive review provided by the reviewers.