

Program Performance Review: Culmination Meeting Memo Mechanical Engineering, B.S. Program

The 2014-2015 Program Performance Review (PPR) process for the B.S. Program in Mechanical Engineering concluded with a culmination meeting on December 11, 2015.

The program submitted ABET reaccreditation materials in lieu of the PPR documents. At the meeting, the program was congratulated for successfully completing the reaccreditation process. The program was commended for the significant progress made in the past several years, which includes:

1. The program has used data to make changes to admission and advisement policies leading to better retention rates, specifically for first-generation college students.
2. Recent university, college and departmental initiatives are making a noticeable impact on retention. The first to second year retention rates averaged 76 percent for the last three years, improving from a 60 percent average for the prior eight years.
3. Students cite the teaching quality of the new faculty hires and the capability of the undergraduate advisor as noteworthy program strengths.

The major recommendations and concerns raised through the reaccreditation process were discussed. Suggestions on how to address them were provided:

1. The program needs to ensure that the learning needs of increasing number of students are met, both in terms of having enough faculty and having adequate instructional space.
 - The department chair reported that the number of ME graduates has increased from 27 in 2009 to 330-350 (estimation) in 2018. The increase requires more faculty members, and more instructional space, particularly for the senior design classes.
 - The dean reported that the department has grown significantly in the number of faculty over the last few years, with 3 new hires in AY 14-15, 2 in AY 15-16, and possibly 2-3 for AY 16-17. The junior faculty are commended for being innovative and taking on the role of transforming the department.
 - The associate dean reported that the college space committee is currently finalizing recommendations for space issues in ECS. The college will examine the recommendations and work with the university to explore solutions.
 - The department chair suggested that an alternative solution for the senior design classes is to reduce the length and/or frequency of the face-to-face sessions. The current session (3hr15min, 2 times/wk) is unnecessary, and student collaboration could be done in part through technology. While some faculty are not supportive of this proposal, the chair believes that the faculty group is committed to student success, and open to discussions of alternative solutions.
 - The department chair also raised the need for sufficient number of computers that host specialized software for ME students. The associate dean estimated that two-three computer labs with 50-60 seats each would greatly help all ECS programs. The Deputy

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Provost suggested the option of “renting out” laptops when needed, as opposed to having desktops. The college will explore this option.

- The AVPAP recommended the program to lay out a long-term and a short-term plan to address the challenges associated with increasing enrollment, and then to share the plans with college and university leadership to determine next steps.
- The associate dean also suggested the need to begin a serious discussion on enrollment management for all ECS undergraduate programs. The Deputy Provost supported this suggestion, and offered to help by providing relevant student data.

2. The program needs to continue a sustainable and effective assessment practice.

- The dean commented that the current department leadership is very experienced with assessment, and the college is not concerned with its sustainability.
- The department chair reported that an assessment plan is in place for the 19 required courses. Data will be collected from each course 2 times during a 6-year ABET review cycle, with the years between data collection spent on improvement implementation. The department is confident in its ability to carry out the plan.