

CALIFORNIA STATE UNIVERSITY, EAST BAY
COMMITTEE ON ACADEMIC PLANNING AND REVIEW

19-20 CAPR 9

DATE SUBMITTED: Jan 27, 2020

TO: The Academic Senate
FROM: The Committee on Academic Planning and Review (CAPR)
SUBJECT: 19-20 CAPR 9: CAPR Analysis of Engineering Management M.S.
Five-Year Program Review
PURPOSE: For Action by the Academic Senate
ACTION REQUESTED: Acceptance of the Five-Year Program Review of the Engineering Management M.S. Program; it is recommended that the program continue without modification.

BACKGROUND:

CAPR took an email vote on Jan 21, 2019, and CAPR members approved the Engineering Management M.S. Five-Year Review, with one abstention. This recommendation is based on conversations that took place during CAPR meetings with the Chair of Engineering Management, Prof. Saeid Motavalli (November 2019), the lead writer of the 5-Year Review, and with the liaisons. The summary of the Five-Year Review is attached to this memo and was approved by Prof. Motavalli. It is recommended that the program continue without modification.

Following approval of this memo by the Senate, the Provost will review the summary and meet with members of the Engineering Management program and the CAPR chair at a time mutually agreeable during the Spring 2020 term to devise a five-year plan moving forward. The Provost will then create a Memorandum of Understanding (MOU) with the Engineering Management program and return that MOU to the Senate as an information item as soon as possible (completion of an MOU may require extension into the following Fall semester given scheduling timelines).

1.0 BACKGROUND

At its meeting on November 7, 2019, CAPR invited Dr. Motavalli to discuss [Engineering Management's 2018-2019 five-year program review](#). Following this meeting, the liaisons to the program (Kevin Kaatz and Stephanie Alexander) worked with the writer of the 5-year review (Dr. Motavalli) to complete the following summary. It is important to note that the page numbers in the summary refer to the pdf as the original report had no page numbers.

2.0 CHECKLIST OF DOCUMENTS SUBMITTED WITH THE FIVE YEAR REVIEW

- Self-study (pp. 4-12)
- Five-year plan (pp. 13-19)
- External reviewer's report (pp. 24-25)
- Program response to the external reviewer's report (pp. 26-27)

3.0 CAPR ANALYSIS/EXECUTIVE SUMMARY

BRIEFLY DESCRIBE THE PROGRAM(S), NUMBER OF STUDENTS SERVED, FACULTY AND REFER TO FIVE-YEAR REPORTS FOR ADDITIONAL INFORMATION. CAN BE COPIED AND INSERTED FROM THE 5-YEAR REVIEW:

The Cal State East Bay School of Engineering began offering the Master of Science in Engineering Management in Fall 2006. Since AY 2010-2011, the program has averaged 30 graduates per year. As of Fall 2017, there were 78 students enrolled in the program. There has been a decrease in enrollment in recent years due to a reduction in the number of international students and a strong employment market. The Engineering Management faculty includes three tenure-track, full time faculty and two part-time lecturer faculty. Like all departments at the university, this program was actively engaged in the quarter to semester conversion.

3.1 DISCUSS THE STRENGTHS AND ASSETS OF THE PROGRAM WITH RESPECT TO FACULTY, STUDENT SUCCESS, CURRICULUM, PROGRAM ENHANCEMENT, ASSESSMENT PLANS AS WELL AS NOTABLE ACCOMPLISHMENTS.

FACULTY:

As mentioned above, Engineering Management has three tenure-track, full-time faculty and two part-time lecturer faculty. Tenure-track faculty typically teach 1 or 2 graduate courses per term

(in addition to two undergraduate courses), with lecturers covering electives and the finance course (p.11). Program faculty have successfully received funding from external sources (the MESA schools' program, Chevron Corporation, and the Fulbright Scholar program) and internal sources to fund assessment and lab support (p. 3). Faculty in the program consult with the program's Industry Advisory Board regularly to ensure that the curriculum addresses industry trends, software tools, and workforce needs (p. 20). The faculty member who serves at the Graduate Coordinator is the advisor for all students in the program, advising students on course enrollment and connecting students with internship and employment opportunities (p. 9).

STUDENT SUCCESS:

Faculty in Engineering Management have taken many steps to support student success in their program. Students can enroll in the courses they need to graduate on time, as core courses are offered at least annually (p. 11). All required courses are now offered in the School of Engineering to ensure that students in the program can enroll in the courses they need (pp. 4, 8). The program discontinued combined undergraduate and graduate classes in order to "require substantial class projects and cover a higher level of technical content" in the graduate courses (p. 4). Classes are primarily offered in the evenings to allow students to work or complete internships (p. 18). Students who graduate from the Engineering Management program are often either already employed or are offered employment by graduation (p. 9).

PROGRAM ENHANCEMENT AND ASSESSMENT:

The faculty in Engineering Management used quarter-to-semester conversion as an opportunity to transform the program curriculum to better serve students looking to manage technical programs during their careers (p. 4). The faculty consulted with their Industry Advisory Board to ensure the program meets the needs of industry (p. 20). The program's 5-Year Review document provides summaries of the program assessment conducted in previous years, and describes the steps taken as part of the program improvement process, including separating undergraduate and graduate courses, developing new courses, and ensuring that all required courses are available from the School of Engineering (p. 8).

3.2 DESCRIBE THE KEY ISSUES AND/OR CONCERNS THAT WERE CENTRAL TO THE FIVE-YEAR YEAR REVIEW PROCESS AND HOW THE DEPARTMENT/PROGRAM PLANS TO ADDRESS THEM;

There were a few issues noted in the External Reviewer's Report, which the program addressed in their response. The program plans to expand student access to their computer laboratory on Saturdays, to ensure that students have access to the software (i.e. simulation) that they need (p. 26). They are currently discussing the recommendations to offer additional hybrid courses and to

combine the required undergraduate prerequisite courses into one course offered at the graduate level with their program faculty and their Industry Advisory board (p. 26).

To address the issue of declining student enrollment, the program is targeting outreach to local student populations (pp. 3, 11). Additionally, the program plans to request a tenure-track faculty line next year, as no new faculty have been hired since 2004 (p. 18).

3.3 NOTE THE PROGRAM'S VISION FOR THE NEXT FIVE YEARS AND WHAT THE PROGRAM HOPES TO ACCOMPLISH.

Engineering Management lists its 5-year vision, starting on p. 20. At the time of composing the 5-Year Review, the university was undergoing quarter to semester conversion and much of their future planning will be spent both implementing a transformed curriculum and assessing it. Faculty not only examined programs at other institutions, but also took advice from the annual Industry Advisory Board meetings in terms of the latest employment trends in order to plan out the next five years. The new curriculum reflects some of the core values of the university in terms of “sustainability, global and social issues” (p. 20).

3.4 PROVIDE CONCRETE STEPS ON HOW THE PROGRAM PLANS TO ACHIEVE ITS VISION IN THE NEXT FIVE YEARS

It is anticipated that the number of students in this program will keep to its current level. However, the issues with international students and the fact that a strong economy means fewer students, at least in the short term (mentioned above). Plans to increase enrollment includes the purchasing of current software, providing new internships for its students, courses in the evenings and offering courses during the summer. The program will also be asking for at least one new tenure track hire. The external reviewer (who found that “the program to be on solid grounds offering a set of courses and skills designed for the community in Northern California. No shortcomings were found during this visit”) suggested creating a lab just for the students and there are now plans on opening a lab on the weekends. The external reviewer also believed that the creation of hybrid courses could increase student success/numbers at it was noted that this would be a topic of discussion for the faculty (p. 26).

4.0 CAPR RECOMMENDATION(S) FOR CONTINUATION OF THE PROGRAM:

CAPR recommends continuation of the program without modification based on all elements satisfied in the five-year report.

The next five-year review for Engineering Management is due in the Spring of the 2023-2024 academic year.