November 9, 2020

Dr. Jocelyn S. Chong
Coordinator
Office of Assessment & Program Review

Dear Jocelyn:

We are pleased to submit to you the findings of the External Review for the Master of Science in Electrical Engineering program with respect to the evaluation conducted for California State Polytechnic University, Pomona, in October 2020.

We would like to take this opportunity to thank you for electing us to participate in this review process. The results of the evaluation for the program are included in the enclosed External Review Report. Please do not hesitate to contact us, should you have any questions, or require any further information, about the report.

Regards,

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Enclosure: External Review Report

External Review Report
Master of Science in Electrical Engineering (MSEE)

by

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Introduction

The Electrical Engineering Department offers a broad-based MSEE program that provides depth in five areas of electrical engineering. The program has the 4th largest enrollment of the university among the 29 Master's programs, 17 full-time tenure/tenure track faculty members and many part-time instructors.

Commendations and Program Strengths

1. MSEE students include local, transfer, and international students who represent a diverse cultural background. The program provides the students with a broad knowledge of the discipline and prepares them to easily join the workforce.

2. Program has access to a large body of undergraduate students attending the university.

3. The electrical engineering faculty is highly qualified to cover all five areas of concentration in the program. Faculty is dedicated to the program and has good record of publications and involvement with industry.

4. Prerequisite and core courses are related and well-defined for each of the five areas of concentration.

5. Although not included in the self-study, students indicated that there is a well-established process in place for their advising and monitoring. Graduate coordinator plays an important role in initial advising of the students as well as guiding and monitoring them through the degree requirements.

6. There are 4 laboratories available for the students to take.

7. MSEE program has selected the high level standards of ABET for assessing its Program Learning Outcomes (PLO) as well as Student Learning Outcomes (SLOs). PLOs and SLOs are well defined and the assessment process is well

established and contributes to the modifications and improvements of the curriculum.

8. For their culminating experience about 90% of the students choose the graduate project option and 10% select thesis. This is a pleasant but unusual trend compared to other sister universities where the majority of the students select the comprehensive exam. The projects and theses generate a heavy load for the supervising faculty and dedication of the faculty to the program is commendable.

9. Except for library, details of available resources were not listed in the self-study report. Interviews with Dean, Chair, faculty, and students indicate that Support from higher university administrators, IT support, equipment support, and state and non-state funds are available.

Recommendations and Suggestions

1. Interviews with faculty and students indicate that some graduate courses are cancelled because of the lack of enough students, i.e., when the number of registered students is less than 12. This reduces the number of available courses to students. As a result, students may not be able to concentrate on one specialization. Also, it may contribute to the slow graduation rate and the slowdown in enrollment. We recommend reducing the minimum number of 12 students to 8.

2. Practically, the current concentration (specialization) structure is not meaningful because concentrations do not include required courses. Also, because of course cancellation, students do not have the opportunity to take enough courses within all 5 offered concentration. We recommend having a minimum number of courses in each concentration (specialization) for graduation if the department can offer enough courses. This can be achieved for example by focusing on a subset of existing concentrations and offering more courses in that subset (not cancelling them) and hiring new faculty in those concentrations. Otherwise, if offering enough courses is not possible, we recommend removing any discussion of concentration from the program.

3. The program has access to a large body of undergraduate students in computer engineering. Also, the program has 6 tenure/tenure track professors in computer engineering area. To attract more students, we recommend changing the name of the program to Electrical and Computer Engineering. This should help with the slowdown in enrollment because of the recent increase of interest in computer related topics and industry.

4. The program should offer the required courses at least every year or more preferably every semester.

5. Interviews with students indicate that students have difficulty taking the undergraduate lab courses that are mandatory as pre-requisite (because students have not taken them in their undergraduate studies). When a course is identified as pre-requisite and a graduate student is required to take it, then the program should give the student priority during the registration process.