**2018-2019 Annual Program Assessment Report**

Please submit report to your department chair or program coordinator, the Associate Dean of your College, and to [james.solomon@csun.edu](mailto:james.solomon@csun.edu), Director of the Office of Academic Assessment and Program Review, by September 30, 2019. You may, but are not required to, submit a separate report for each program, including graduate degree programs, which conducted assessment activities, or you may combine programs in a single report. **Please identify your department/program in the file name for your report.**

**College: ECS**

**Department: ECE**

**Program: EE and CE**

**Assessment liaison: Ronald Mehler**

1. **Please check off whichever is applicable:**

**A. \_\_\_\_\_\_\_\_ Measured student work within program major/options.**

**B. \_\_\_\_\_\_\_\_ Analyzed results of measurement within program major/options.**

**C. \_\_\_X\_\_\_\_ Applied results of analysis to program review/curriculum/review/revision major/options.**

**D. \_\_\_\_\_\_\_\_\_ Focused exclusively on the direct assessment measurement of General Education Arts and Humanities learning outcomes**

1. **Overview of Annual Assessment Project(s).** On a separate sheet,provide a brief overview of this year’s assessment activities, including:

* an explanation for why your department chose the assessment activities (measurement, analysis, application, or GE assessment) that it enacted
* if your department implemented assessment **option A**, identify which program SLOs were assessed (please identify the SLOs in full), in which classes and/or contexts, what assessment instruments were used and the methodology employed, the resulting scores, and the relation between this year’s measure of student work and that of past years: (include as an appendix any and all relevant materials that you wish to include)
* if your department implemented assessment **option B**, identify what conclusions were drawn from the analysis of measured results, what changes to the program were planned in response, and the relation between this year’s analyses and past and future assessment activities
* if your department implemented **option C**, identify the program modifications that were adopted, and the relation between program modifications and past and future assessment activities
* if your program implemented **option D**, exclusively or simultaneously with **options** **A, B, and/or C**, identify the basic skill(s) assessed and the precise learning outcomes assessed, the assessment instruments and methodology employed, and the resulting scores
* in what way(s) your assessment activities may reflect the university’s commitment to diversity in all its dimensions but especially with respect to underrepresented groups
* any other assessment-related information you wish to include, including SLO revision (especially to ensure continuing alignment between program course offerings and both program and university student learning outcomes), and/or the creation and modification of new assessment instruments

**3. Preview of planned assessment activities for 2020-21.** Include a brief description as reflective of a continuous program of ongoing assessment.

**Assessment Overview**

Our assessment process (shown below) consists of a three-year cycle, with three phases: the Major Assessment Phase (lasting for one year), in which we collect data from exams, surveys, etc., the Major Evaluation Phase (lasting for one semester), in which we evaluate the assessment data and form an Improvement Plan, and the Implementation Phase (lasting for three semesters), in which we implement the Program Improvement Plan. Fall 2019 is the first semester of the Implementation phase. In addition to this regularly-scheduled activity, this fall we will also host the ABET evaluators.

The three-year cycle is:

Major Assessment Phase

(collect data: exams, homework, surveys, …)

Major Evaluation Phase

(analyze and evaluate assessment results)

Implementation Phase

(Implement Program Improvement Plan)

1 (calendar) year:

2018, 2021, …

1 semester:

Sp ’19, Sp ‘22, …

3 semesters

Output: Program Improvement

Our student outcomes and performance criteria are given below. Our policy is to adopt whatever outcomes ABET sets in their entirety and without modification. Each course is assessed for one or more outcomes. The responsible faculty member writes a rubric showing the performance criteria for each outcome being assessed.

**Student Outcomes 1-7 (Modified and Approved for EE and CompE Program: 9/18)**

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.

Fall ’19 Assessment

The past academic year was spent gathering outcome data and writing the ABET report. The ABET report was delivered on time in June. This is a voluminous report and will not be reproduced here.

In addition to data gathered by course instructors, outside evaluators were used. Our industrial advisory board was surveyed and numerous outside experts were recruited to evaluate senior design projects. These efforts are all documented in detail in the ABET self-study report.

Program Improvement

The following program improvement points were approved by the ECE faculty in Spring 2019. Our goal is to implement all of them in the next three semesters, starting in Fall 2019.

1. Create a CompE section of 309 (Numerical Methods in Electrical Engineering) that uses C/C++

2. Cover Simulink and Labview in EE version of 309

3. Update 240L manual, ensure it stays synchronized with lecture

4. Update 410L manual

5. Add soldering workshops at least annually, every semester would be better

6. Offer PCB workshops regularly

In addition to the commitment made to implement these six points, other faculty members have suggested the following additional improvements.

1. Develop a new robotics course

2. Update ECE 320/L Theory of Digital Design lecture and lab

3. Modify a special topics in power electronics course, making it a graduate/senior elective catalog course. The new proposed title is “Electric Power System Protection.” It is a graduate/undergraduate (500) level course on electric power system protection.