**2017-2018 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 28, 2018. 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: BS, Electrical and Computer Engineering**

**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 Natural Sciences 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 2018-19.** 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 2017 is the third semester of the Implementation Phase. Spring 2018 is the first semester of data collection.

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

Due to changes mandated by ABET, the assessed outcomes are changing in the middle of the cycle. The old outcomes are shown in the first table below, the new in the second.

**Student Outcomes a - k (Modified and Approved for EE and CompE Program: 9/14)**

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| **ABET Student Outcomes** |
| a. an ability to apply knowledge of mathematics, science, and engineering |
| b. an ability to design and conduct experiments, as well as to analyze and interpret data |
| c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability |
| d. an ability to function on multidisciplinary teams |
| e. an ability to identify, formulate, and solve engineering problems |
| f. an understanding of professional and ethical responsibility |
| g. an ability to communicate effectively |
| h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context |
| i. a recognition of the need for, and an ability to engage in life-long learning |
| j. a knowledge of contemporary issues |
| k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice |

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| **2018 ABET Student Outcomes: Approved 2018** |
| 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. |

Given that Spring 2018 was the last semester of implementation of the previous program improvement plan, most tasks had been completed in the previous year. Only writing new lab manuals for electronics courses remained, and this was accomplished that semester.

In anticipation of final adoption of the new outcomes, data were gathered in Spring 2018 for assessing these outcomes. They were formally adopted by the department in Fall 2018.