

Electrical Engineering, BS/BA



Assessment Overview & Results Summary

College/School: Shiley-Marcos School of Engineering

Measures Used: Outcomes are identified for assessment within 6 specific required courses and the two program electives. Student performances in these courses are assessed directly to demonstrate achievements of the student learning outcomes and summarized using a Student Performance Assessment form based on the assessment plan that links the specific student works in the course (e.g., HW 2 Problem 3) to their related learning outcomes directly.

An additional report relates the course learning objectives to student outcomes, metrics and depth of coverage. Numerical data representing level of achievement for student outcomes (1)-(8) are thus collected for each of the key outcomes- identified courses. All quantitative measures for all outcomes when combined have been in the satisfactory range (e.g., 3 or higher on a scale of 1 to 5). Several developments and improvements have been made within the program, to courses, and within the semester as part of ongoing assessment processes. In most cases, changes were initiated as a result of more than one input or factor after faculty review and discussion.

Process for Interpretation of Evidence: The program is assessed every six years for accreditation. The assessment process undertaken involves the departmental faculty, with data aggregation and reporting by the chair. It describes the achievement of student objectives in the program and continuous improvement process that can be initiated to increase the level of achievement. An example of such an action might include, (i) increasing electives – this was triggered by faculty course assessment and senior exit surveys. This change resulted in more flexibility in curriculum with increased choices and technical breadth, and allowing for concentration within the major; 2) increasing options for multi-major and industry-sponsored capstone projects; 3) increased experience with testing (experiments), professional standards and realistic design constraints; 4) enhancement of writing experiences within the capstone.

How Findings are Used:

- ✓ Changes to curriculum/pedagogy
- ✓ Changes to faculty workload
- ✓ Changes to assessment methods

**Results Summary and
Continuous Improvement
Actions for AY 2020-2021:**

In 2020-2021 the assessment process was largely directed to the program's student outcomes (1)-(8) which correspond to the Engineering Accreditation Commission of ABET's (1)-(7) and an additional outcome related to the application of probability and statistics. The established process to assess achievement of each outcome is based mostly upon evaluation of student work, complementing also by senior exit surveys and other instruments. The program faculty review plan assessment on a course-by-course basis and review data from the instructors who implement any actions or changes necessary. Assessments of student work and senior exit surveys are done annually. Additional instruments such as alumni and employer surveys are done every three years.