Program Unit: Mechanical Engineering BS/BA

College/School: Shiley-Marcos School of Engineering

Assessment Overview
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 chair, as a quality controller, reviews these assessment data and engages the program faculty to 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.

Results Summary
Student performances in each course are assessed directly to demonstrate achievements of the student learning outcomes via the use of a Student Performance Assessment Data (SPAD) form, which form in effect links the specific student works in the course (e.g., HW 2 Problem 3) to their related learning outcomes directly. Numerical data based on the SPAD forms representing level of achievement for student outcomes (a)-(k) have been collected for the 2009-2014 academic years. All quantitative measures for all outcomes have attained values ranging from 3.4 to 3.8 (on a scale of 1 to 4), which are greater than our preset satisfactory threshold of 3.3, indicating better than satisfactory results. Several developments and improvements have been made within the program and the courses within its curriculum as a result of the ongoing assessment processes. In most cases, changes were initiated as a result of more than one input or factor after faculty review and discussion.

Examples of actions taken include: 1) 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; and 2) badging system for machine shop practices – this was triggered by faculty course assessment and good practice from school visits, which allowed for more flexible schedules, more effective use of faculty resources, and accommodated increased enrollments.