

## Engineering, BS/BA



### Assessment Overview & Results Summary

<b>College/School:</b>	Shiley-Marcos School of Engineering
<b>Measures Used:</b>	Educational objectives are mapped to ABET Student Outcomes (SO). Each SO is assessed in capstone course and selected other courses for specific outcomes (GENG 350, GENG 311, GENG 360 & capstone (GENG 492)). Student work is evaluated using rubrics designed for each SO. Faculty course assessments, surveys, and other instruments are also used to provide context and additional information about the achievement of SOs.
<b>Process for Interpretation of Evidence:</b>	Faculty interpret this evidence during faculty meetings where faculty teaching these courses present reflection and data about their courses and other SO measures are considered. Two or three of the seven SOs are considered each year.
<b>How Findings are Used:</b>	<ul style="list-style-type: none"><li>✓ Changes to curriculum/pedagogy</li><li>✓ Changes to assessment methods</li><li>✓ Increased faculty professional development</li></ul>
<b>Results Summary and Continuous Improvement Actions for AY 2020-2021:</b>	<p>In the 2020-2021 academic year, the BS/BA in Engineering program produced a self-study for its initial accreditation by ABET, the accreditation body for Engineering. This was a comprehensive review of the program during which all seven SO were assessed. The faculty had determined ENGR 311, GENG 350, GENG 360, and GENG 492 to be the primary courses in which the program will measure student achievement of outcomes. The faculty review "Faculty Course Assessment" reports in which the instructor of the classes describes a cohort's achievement of each of the course learning objectives. Based on this review, several changes were implemented to enhance student learning and improve program quality.</p> <p>GENG 311 was created to replace ENGR 311 as a required course. ENGR 311, a course previously shared by all engineering majors, is no longer used by any other major. Creating a GENG course allows greater control of the content by the program. The content in ENGR 311 and GENG 311 will be comparable.</p> <p>ISYE 380 will now be cross-listed with GENG 380. Cross-listing allows the chair of either department to offer and schedule the course which should result in more offerings of the course and better meet the needs</p>

of our students for this required class.

GENG 250 was formally created. It had been taught as GENG 294. This course provides students with a holistic view of energy and sustainability concepts that ground them for future studies. Student response has been positive and it fits well with the goals of our Integrated Engineering program.

Catalog changes were done to reflect the addition of new courses. This results in fewer substitutions being necessary and makes for clearer pathways for students through the curriculum.

Removed COMP 120 from curriculum and replaced with any engineering elective. Students struggle with COMP 120 due to a programming language change. COMP 120 is not used in GENG 360, which requires only COMP 110 knowledge. This change allows students more flexibility in exploring additional engineering electives. Removal of this major requirement allows for more scheduling options. Instructors are committed to including more programming experience throughout the curriculum in various courses.

Revised course placement in SUST concentration curriculum (Moved into EOSC course and GENG 384 to 5th semester). To bring all concentrations (except ESW) into agreement for the 4th semester we have pushed all EOSC classes off one semester. Students are not required to declare until their 4th semester, causing many to miss the deadlines early in the semester. Students are more aware of pre-enrollment deadlines in EOSC (external department) once they are in our program and on our rosters.

Prerequisites changes for GENG 350 were done to ensure students are better prepared to take this class.

Adjusted prerequisites on GENG 384 and GENG 360 to reflect changes in curriculum. Students do not need Calc 3 to be successful in GENG 384. MENG 210 is missing as a prerequisite to GENG 384 based on course content. Routine update to GENG 360 to reflect changes in the curriculum. Results should be that students are better prepared for GENG 384 and fewer administrative waivers are needed (Calc 3 requirement dropped to Calc 2, MENG 210 prerequisite added). Fewer administrative waivers are needed for GENG 360 by updating the prerequisites to match what students are advised to take in the program (GENG 288 OR ELEC 201, GENG 250 OR MENG 260, GENG 311 OR ENGR 311, replace COMP 120 with COMP 110).

The self-study was submitted in June 2021 and an evaluation visit was conducted in Fall 2021.