

Industrial and Systems Engineering, BS/BA



Assessment Overview & Results Summary

College/School:	Shiley-Marcos School of Engineering
Measures Used:	Industrial and Systems Engineering (ISYE) program objectives are mapped to the Accreditation Board for Engineering and Technology (ABET) student outcomes (SOs). Each SO is assessed in several courses in the degree curriculum through different methods such as homework, quizzes/exams, case studies, projects, papers/reports, presentations, lab work, teamwork, and course GPA. The senior design project class (capstone) is also used to assess most of the ABET SOs through student project proposal, report, presentations, data collection/analysis, final results, reflection paper and teamwork.
Process for Interpretation of Evidence:	<p>Faculty review and discuss the achievement of each SO during department faculty meetings. A pre-defined schedule is used to guide the review of data assessment, evaluation, or change of each SO (typically on a 2-3 year cycle). Process summary:</p> <ol style="list-style-type: none">1) Faculty collect data for every student outcome every semester on predesignated courses. Data is then summarized by the responsible faculty coordinators.2) Faculty are asked to write a course assessment for every ISYE course that they teach at the end of the semester. This is intended to document instructional feedback and outcomes of curriculum changes from the instructor's perspective.3) Annual senior exit surveys are also used to document student feedback on their experiences with the courses in the curriculum, program strengths and weaknesses, and areas of improvement.4) Faculty meet to evaluate data for each SO, along with the overall experiences of the most recent graduated class.
How Findings are Used:	<ul style="list-style-type: none">✓ Changes to curriculum/pedagogy✓ Changes to faculty workload✓ Changes to assessment methods✓ Changes to student services✓ Increased faculty professional development
Results Summary and Continuous Improvement Actions for AY 2020-2021:	Assessment results show that the ISyE program met targets for all seven student learning outcomes. The program, however, always strives for continuous improvements to further enhance our students' learning experiences. During 2020-21 academic year, the ISyE program made the following changes to our curriculum as part of our continuous

improvement process:

1) Additional case studies were introduced in ISYE 330 starting Fall 2020 semester with progression in open-endedness and independent problem solving. Also, more real-world examples for the applications of probability and statistics were incorporated throughout the course. These changes were intended to help students strengthen their critical thinking and problem solving skills, which would help them solve real-world problems more effectively during their senior capstone projects.

2) ISyE faculty formally approved a new senior capstone curriculum model, requiring students to take the one-unit Project Prep Course (ISYE 491) in the Fall semester preceding their Spring ISYE 492 class. As a result, the total number of required units for BS/BA ISyE degree will be increased to 148 units, effective starting 2022-23 catalog year. With the introduction of the one-unit short course in the Fall, students are introduced early to the projects, able to visit the sponsor's sites, and complete onboarding logistics before the official project start date. Student team and project assignments were also finalized before the Spring semester when the project actually took place, allowing more time dedication towards actual problem solving.