

Assessment Plan
M.S. in Industrial and Systems Engineering
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The student learning objectives (SLOs) are:

- A. An ability to define and formulate Industrial and Systems Engineering problems.
- B. An ability to apply math and scientific tools to define, design, predict, improve, and optimize the systems performance.
- C. An ability to independently learn advanced topics in Industrial and Systems Engineering.
- D. An Ability to conduct research or project professionally and ethically.
- E. An ability to effectively communicate ideas/concepts and research findings through technical reports and professional presentations.

The operational definition for these SLOs are shown in Exhibit 1.

Table 1 presents the different direct and indirect methods used to assess the learning objectives. The table also presents a brief description of each method used, a timeline for implementation, the person responsible, and the objectives that each method addresses.

Table 1: Different methods applied to assess SLOs

Method	Description	Timeline	Person Responsible	Objectives
Course embedded assessments	Evaluation of student's performance on specific course activities (e.g. assignments, quizzes, exams, projects, papers, discussions, etc.)	Fall and Spring	Instructor	SLOs: A, C, and E
Thesis, Project, or Paper evaluation	A committee of three (advisor and 2 faculty members) evaluate the student's performance in their thesis or project. In the case of a paper, the advisor evaluates the student's performance based on the paper that was written and presented by the student.	Fall, Spring, and Summer	Advisor	SLOs: A, B, C, D, and E
Employer survey	Graduate students are involved in internships and engineer-in-residence program. These students work closely with employers under the supervision of a faculty. A survey is shared with the employer to seek their feedback.	Annually	Chair	SLOs: A, B, C, D, and E
Graduate exit survey	Graduating student's feedback on how well they achieved the SLOs	Fall, Spring, and Summer	Chair	SLOs: A, B, C, D, and E

The masters' degree requirements in Industrial and Systems Engineering are designed to provide maximum flexibility for the students to choose their own course plan in consultation with their advisors. All the students are required to register for the graduate seminar (1 hour), complete a minimum of 24 to 30 hours of course work (24 hours for thesis option; 27 hours for project option; 30 hours for paper option), and complete the thesis (6 hours), project (3 hours), or a paper (1 hour).

Course embedded assessment

The instructor of each course lists the program outcomes/objectives and course outcomes/objectives in their syllabus. At the end of the semester, a survey is conducted to find out from the students if the course and program outcomes were met. Depending on the content of the course, individual faculty members get to decide the appropriate outcomes assessed in their courses.

Thesis, Project, or Paper Evaluation

The student performance in their thesis and project work is evaluated by the advisor and the committee members. The committee typically consists of three faculty members, including the advisor. The committee judges the students' work based on the research contribution, thoroughness, experimental results, etc.

The students can also elect to do a paper (1 hour) instead of a thesis or a project. In which case, the advisor will judge the students' performance.

Employer Survey

An annual survey of employers will give us an idea on how our students are prepared to work in the real world. The supervisors (potential employers) of our students who do an internship or engineer-in-residence projects are also be invited to fill a survey.

Graduate Exit Survey

Each graduate is asked to fill out an exit survey. The graduates are asked to self-assess their attainment of the SLOs through the survey.