

**Academic Assessment Plan
MS / Industrial Engineering
May 15, 2015**

Program Goals

1. Prepare students for significant applications of and contributions to Industrial Engineering beyond graduation.
2. Produce projects and theses which meet high academic standards and constitute significant applications of and contributions to Industrial Engineering.

Student Learning Outcomes (SLO)

1. Students will make satisfactory progress toward the degree, preparing to write a thesis which meets high academic standards and constitutes a significant contribution to Industrial Engineering.
2. Thesis students will be prepared to write a thesis which meets high academic standards and constitutes a significant contribution to Industrial Engineering.
3. Thesis students will write a thesis which meets high academic standards and constitutes a significant contribution to Industrial Engineering.
4. Project students will present a project which meets high academic standards and constitutes a significant application of Industrial Engineering.
5. Coursework students will demonstrate achievement of select course outcomes.
6. Students will be able to communicate effectively.

Assessment Process

1. Timeline
 - a) Annual Graduate Student Academic Reviews submitted to the Graduate School by June 30
 - b) Thesis students present a master's thesis proposal approximately one semester before graduation.
 - c) Thesis students submit a master's thesis and defend it in the Comprehensive Exam.
 - d) Project students present a master's project in the Comprehensive Exam.
 - e) Coursework students answer questions related to select course outcomes in the Comprehensive Exam.
 - f) Assessment results and analysis presented at August faculty "retreat" to stimulate discussion about any program (or assessment process) changes
2. Means of assessment
 - a) SLO1 assessed annually (indirect and direct)
 - Cumulative GPA (desired level of achievement ≥ 3.0)
 - Annual Graduate Student Academic Review by graduate coordinator in consultation with student advisor (desired level of achievement is "satisfactory")
 - b) SLO2 assessed with master's thesis proposal
 - Student self-assessment of preparation to write a thesis with respect to Comprehension (understanding literature), Application (problem solving),

Analysis and Synthesis (support for generalizations, alternative solutions), and Evaluation (validity)

- Thesis Committee members assessment of preparation to write a thesis...
 - c) SLO3 assessed with master's thesis defense (Comprehensive Exam)
 - Student self-assessment of having written a thesis which meets high academic standards and constitutes a significant contribution to Industrial Engineering with respect to...
 - Thesis Committee members assessment of having written a thesis...
 - d) SLO4 assessed with master's project presentation (Comprehensive Exam)
 - Student self-assessment of having presented a project which meets high academic standards and constitutes a significant application of Industrial Engineering
 - Advisory Committee assessment of having presented a project...
 - e) SLO5 assessed with master's coursework exam (Comprehensive Exam)
 - Student self-assessment of having achieved select course outcomes, on a scale from 1 (strongly disagree) to 5 (strongly agree)*
 - Advisory committee members assessment of having achieved select course outcomes, on a scale from 1 (strongly disagree) to 5 (strongly agree)*
 - f) SLO6 assessed with master's thesis proposal and Comprehensive Exam (master's thesis defense, master's project presentation, master's coursework exam)
 - Student self-assessment of effective communication
 - Committee members assessment of effective communication
3. Reported annually to the Dean: Assessment results and analysis, and any consequential program or assessment process changes

Example of closed-form assessments* (master's thesis proposal)

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
- N/A

1. I / The student am / is prepared to write a thesis based on comprehension of the relevant literature.
2. I / The student am / is prepared to write a thesis based on application of methods for problem solving.
3. I / The student am / is prepared to write a thesis based on analysis and support for generalizations, or generation of alternative solutions.
4. I / The student am / is prepared to write a thesis based on evaluation and validation.
5. I / The student am / has demonstrated effective communication skills.

* desired level of achievement on closed-form assessments is agree or strongly agree