

Annual Academic Assessment Report

Master of Science in Engineering Management (MSEM)

Program Learning Outcomes:

1. Apply the technical and soft skills required to lead and manage diverse and inclusive, complex global engineering activities involving processes, technology, and a technical workforce to support the organization's mission and vision.
2. Use technology to develop plans, management systems, and innovative products and services to create value that are agile, resilient, and sustainable.
3. Lead and manage multi-disciplinary, multi-cultural, geographically dispersed, agile teams, and projects.
4. Identify problems, analyze engineering alternatives, and design solutions considering financial, environmental, and societal impact for the public good.
5. Assess the financial implications of engineering programs.
6. Use techniques and models to support data-driven decision-making involving significant future uncertainties about technologies, environment, demand.
7. Assess legal, safety, regulatory, professional, and ethical organizational and individual responsibilities.
8. Communicate clearly and concisely, both orally and in writing, to stakeholders and senior decision-makers.

Assessment and Evaluation: AY 23

The faculty of the Master of Science in Engineering Management faculty evaluated program outcome assessment data at its annual faculty meeting, held July 27-28, 2023. Program directors assess data at least semiannually and as significant feedback is received.

Overall mean GPA was 3.8 for AY 2023. Course objectives are directly mapped to program outcomes, the high GPA indicates a high level of overall outcomes mastery. Each outcome is also measured by student reports, comprehensive examinations, and faculty feedback.

Students are required to present evidence of achieving each program outcome. 33 of 33 students passed the comprehensive examination. Each outcome was analyzed with the following results:

- **Outcome 1:**
 - 100% of students reported agreed or strongly agreed they mastered outcome 1.
 - No students failed outcome 1.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 1.
- **Outcome 2:**
 - 97% of students reported agreed or strongly agreed they mastered outcome 2.
 - No students failed outcome 2.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 2.
- **Outcome 3:**
 - 91% of students reported agreed or strongly agreed they mastered outcome 3.
 - No students failed outcome 3.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 3.
- **Outcome 4:**
 - 100% of students reported agreed or strongly agreed they mastered outcome 4.
 - No students failed outcome 4.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 4.
- **Outcome 5:**
 - 91% of students reported agreed or strongly agreed they mastered outcome 5.
 - No students failed outcome 5.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 5.
- **Outcome 6:**
 - 75% of students reported agreed or strongly agreed they mastered outcome 6.
 - No students failed outcome 6.

- Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 6.
- **Outcome 7:**
 - 94% of students reported agreed or strongly agreed they mastered outcome 7.
 - No student failed program outcome 7.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 7.
- **Outcome 8:**
 - 97% of students reported agreed or strongly agreed they mastered outcome 8.
 - 33 of 33 graduates passed the comprehensive examination which requires students to prevent evidence of achieving each program outcome. One student failed outcome 8 but successfully attempted it on the second attempt.
 - Program directors conduct exit interviews with all graduates, incorporating feedback and discussing results. No students provided feedback on a lack of achieving outcome 8.

Changes to the Degree Program – Planned or Considered

In response to the lower scores on Outcome 6 and faculty feedback we have made probability and statistics a required course for the MSEM program. We believe this will increase the student mastery of Outcome 6 by better preparing the students for the quantitative courses in the program.

Changes to the Assessment Process – Planned or Completed

The use of student surveys, mean grades, comprehensive examinations, faculty feedback on mapped course objectives and exit interviews have provided both direct and indirect evidence have been effective assessing student success.

The program conducts a robust course refresh and rebuild process which reevaluated 1 course this academic year. The process validates course objectives and maps them to program outcomes, providing evidence through faculty and student feedback as well as comprehensive examination performance.