

Student creation of written project report

Student oral presentation (online or in person) to a panel of committee members.

Background for the Fall 2022 course, developed and taught by the Basic Engineering Associate Professor.

(For Fall 2022 EMGT6900 offering. A Summer 2023 EMGT6900 offering will be offered and graded by due date of the 2023 annual Campus Assessment.)

The Project Repo

A

)A wa

There were two sets of questions on the oral presentation scoresheets, one for grading of the student in broad categories of

- Appropriate presentation of project knowledge and findings
- Correct Format, Grammar and Spelling
- Organization of presentation and displayed preparation

These scoring categories may not align well with "Assessment of communication" for an oral presentation point of view. Thus, the next EMGT6900 offering will include instructor questions beyond simply prescribed grading from the course.

Students will be able to analyze and evaluate data from multiple sources as part of making informed engineering management decisions.

SLO2 A1: EMGT 6220 Assignment 2 results. Data contains: Student creation and evaluation of Engineering Management proposal.

SLO2 A2: EMGT6900 (Final Professional Project class) Exit Survey. Report contains data:

- Student self-efficacy of engineering management analysis tools learned as part of MSEM educational experience.
- Student self-efficacy of business management tools learned as part of MSEM courses enrolled from the Business College.

SLO2 A3: EMGT 6300 Project assignment. Data contains: Student creation and evaluation of Decision Analysis report, based upon several selected Engineering Management publications.

SLO2 A1: Metrics for success

- a. Exceeding 75%: Student proportion of above average grading outcomes.

SLO2 A2: Metrics for success

- a. Greater than 50% of students report good confidence (or higher) in at least 75% of the listed analytical tools.
- b. Greater than 50% of students report good confidence (or higher) in at least 75% of the listed management tools.

Student self-efficacy of business management tools learned as part of MSEM courses enrolled from the Business College.

Fall 2022 was the first semester for the MSEM 'professional project course,' EMGT6900. The students were requested to address the MSEM program as part of their EMGT6900 Oral Presentation. Primary information was in students' presentation slide bullets. Also, notes were taken by the instructor and other faculty attending (optional) with regards to their presentation comments on this topic.

Greater than 50% of students report good confidence (or higher) in at least 75% of the listed analytical tools.

Greater than 50% of students report good confidence (or higher) in at least 75% of the listed management tools.

Some reported value to the following topics in a general manner:

Decision analysis (3 student)
Project Management (1 student)
Forecasting (1 student)

Some reported value to the following management-oriented topics in a general manner:

Organizational Leadership (4 students)

The method used to collect the data—oral presentation slides and manual notes—was too broadly interpreted by the students to be of value in Fall 2023, except for anecdotal information.

The goal of addressing these topics was to ask their experiences in learning from the "Engineering" side (seven courses from the Engineering College) and the "Business" side (four courses from the Business College).

The students reported primarily upon their views of 'most useful' or 'most valuable in the workplace.' They did not address the more specific topics of "analytical tools" or "management tools" learned and practiced.

It was valuable to learn that the Business College's Organizational Leadership course (BMGT6200) was so universally well received by all these Engineering students. The MSEM Coordinator is located in the College of Engineering and thus did not have clear feedback on any of the four College of Business' courses taken by the students, until this assessment was completed.

Student creation and evaluation of Decision Analysis report, based upon several selected Engineering Management publications.

Students are to investigate methods of decision-making in an Engineering Management environment. They develop their supporting introductions and backgrounds, with a summative conclusion. All their statements must be supported by Engineering Management disseminations. Writing style is addressed, with an emphasis for connecting statements with evidence or deductive reasoning.

Of note: Only 3 students were enrolled for this course in this semester.

Exceeding 75%: Student proportion of above average grading outcomes.

The metric was achieved.

Low enrollment was already noted, regardless. In this case, it may have allowed for even a distance course instructor to devote more time per student than may otherwise be possible for future, higher enrollments. Thus, this perfect metric achievement may change in the future.

Also of note: EMGT6300 is offered as the 6th Engineering course in the 5th semester of the MSEM program. Students should be understanding the nature of Engineering Management details at this point in the program.

Student creation and evaluation of Engineering Management proposal.

Given the achievement of the metric score, only a continuing review for the Spring 2024 assignment is warranted.

A totally online and asynchronous course may have the immediate observation that students do not always consume the instructions on their own in an in-depth or comprehending manner. Nevertheless, EMGT6220 is slated as taken in the 3rd semester of the MSEM program; it also is envisioned as the 3rd Engineering course taken by the students. Thus, the student should have had previous experience in both online instruction and in the Engineering Management genre.

Student self-efficacy of engineering management analysis tools learned as part of MSEM educational experience.

Student self-efficacy of business management tools learned as part of MSEM courses enrolled from the Business College.

The assessment method was simply too vague to be of value in this first course offering.

This method was not anonymous, and accomplished while the EMGT6900 grades had yet to be finalized. Thus, students' observations of their learning experience and knowledge may be even less accurate than already observed.

degrees. This issue is not a concern for totally online programs with fully employed students.

The Degrees Sought data implies the MSEM degree is completed on an average of 2.6 years per student, which may indicate a similar graduation length as that of other on campus engineering degree programs. No on-campus comparative data is available to Coordinator by time of this report.

Student enrollment is a key component of the program's continued sustainability. The data shows trend data as slightly increasing each academic year: 26 to 39 to 53 by end of 2022-2023 AY. Part of the increases are due to students being retained longer than the planned 2 years of enrollment, as they enroll in courses for less than 2 courses per semester, thus staying in the pipeline.

Only two faculty in the MSEM-supporting department are eligible and partially available to teach MSEM Engineering graduate courses.

These were sufficiently demonstrated in EMGT6900. However, the individual course's scoring categories may not align well with "Assessment of communication" for an oral presentation point of view. Thus, the next EMGT6900 offering will include instructor questions (interactive and survey-based) beyond simply prescribed grading from the course.

The engineering management tools knowledge application was well demonstrated in two course results. However, for one course (EMGT6300), there was low enrollment (three students) to prevent any confidence in consistent outcomes. This assessment will be repeated in the next course offering with more students participating. The third assessment approach, using self-reported confidence in the use of engineering management knowledge, was not sufficiently responded to by the graduates. An

anonymous survey will be integrated into EMGT6900 and required for completion, in order to remedy this issue for the SLO.

Program Outcomes were not separately reported in AY2022-2023. However, preliminary summaries are reported in the Summative Evaluation below, and details may be updated upon request.

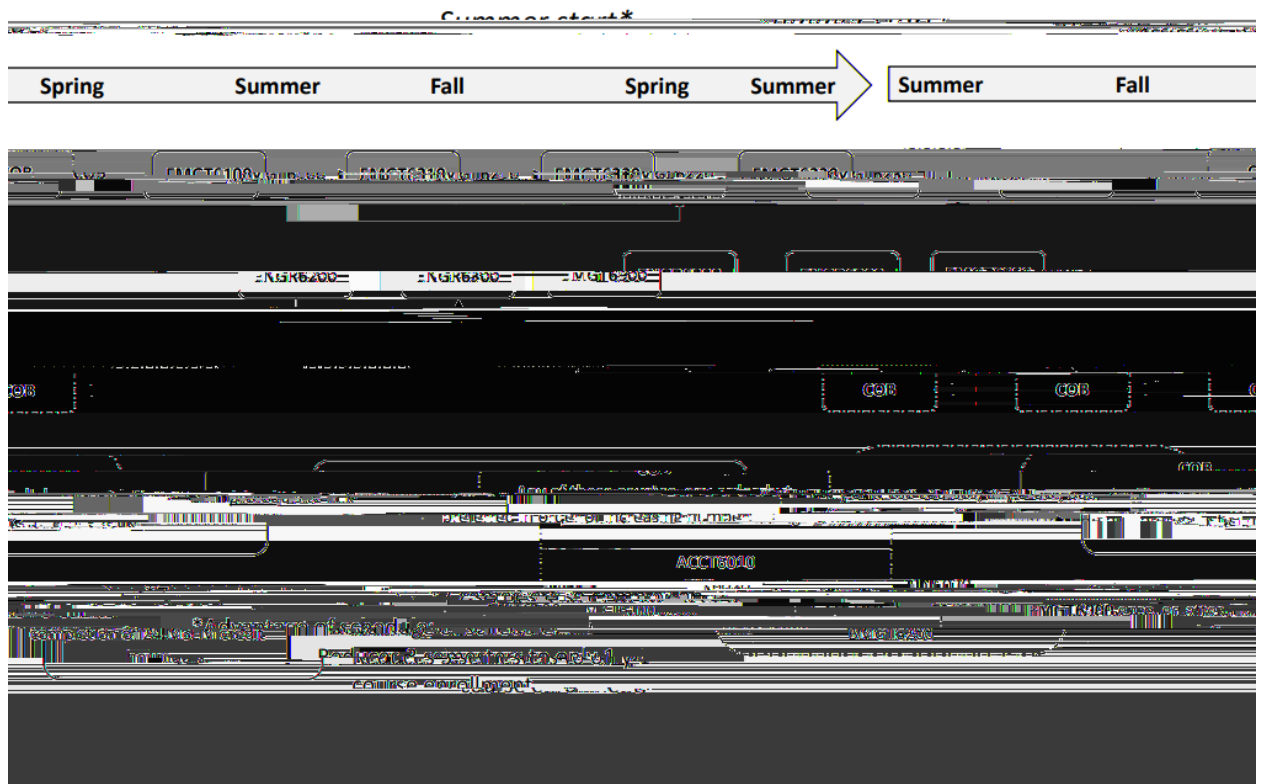
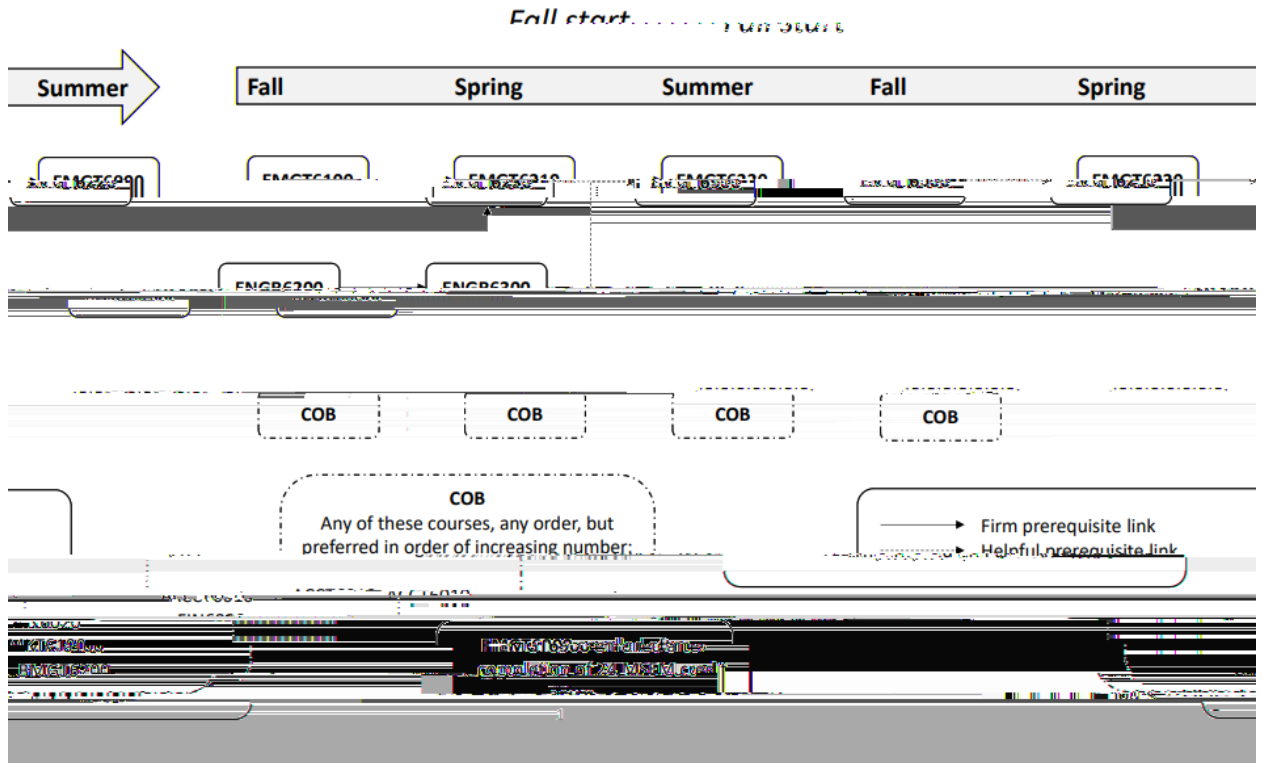
No concern in student completion makespan is present, so no changes are planned for this PO1.

The Coordinator will request on-campus graduation data for engineering graduate programs, for comparison

Increasing numbers staying enrolled is not a concern, due to fully employed, career students. No activities to change this trend are planned.

The MSEM Coordinator is seeking alternatives for supporting the teaching obligations. Adjunct employment is one option currently underway. In 2024, a curriculum review will soon be conducted by a committee of MSEM-oriented faculty and external industry advisors to better understand other options for sustainability.

Appendix 1: Curriculum Map, Engineering Management MS



Appendix 1, Curriculum Map, Engineering Management MS, cont.

