

Assessment Cycle 2025-2026

Program: Bachelor of Science (BS), Industrial Engineering Technology (145)

Department of Engineering and Technology

College of Arts and Sciences

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Date: 05-29-2026

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Northwestern Mission. Northwestern State University is a responsive, student-oriented institution committed to acquiring, creating, and disseminating knowledge through innovative teaching, research, and service. With its certificate, undergraduate, and graduate programs, Northwestern State University prepares its increasingly diverse student population to contribute to an inclusive global community with a steadfast dedication to improving our region, state, and nation.

College of Arts and Sciences Mission. The College of Arts & Sciences, the largest college at Northwestern State University, is a diverse community of scholars, teachers, and students, working collaboratively to acquire, create, and disseminate knowledge through transformational, high-impact experiential learning practices, research, and service. The College strives to produce graduates who are productive members of society, equipped with the capability to promote economic and social development and improve the overall quality of life in the region. The College provides an unequaled undergraduate education in the social and behavioral sciences, English, communication, journalism, media arts, biological and physical sciences, and the creative and performing arts, and at the graduate level in the creative and performing arts, English, TESOL, and Homeland Security. Uniquely, the College houses the Louisiana Scholars' College (the State's designated Honors College), the Louisiana Folklife Center, and the Creole Center, demonstrating its commitment to community service, research, and preservation of Louisiana's precious resources.

Engineering Technology Department Mission: The Engineering Technology Department is dedicated to delivering high-quality education in the areas of engineering technology, electronics engineering technology, and industrial engineering technology, as well as pre-engineering preparation. The department prepares students for successful careers and enriched lives in the public, private, and non-profit sectors and promotes the economic development and enrichment of the communities we serve.

Industrial Engineering Technology Mission Statement: The mission of the Industrial Engineering Technology program is to produce four-year graduates with the breadth and depth of knowledge in industrial engineering technology to become productive lifelong members of the regional workforce and the local society.

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Purpose: The Bachelor of Science in Industrial Engineering Technology program will prepare students to 1) analyze, test, build, operate, and maintain industrial systems (equipment, warehouse operations, safety management, plant operations, etc.) and 2) manage manufacturing facilities, systems, and operations to include installation, motion and time, safety, and efficiency. It prepares students for entry-level positions in government and the private sector, in which the ability to implement changes, upgrade operations, set up equipment, analyze problems, and modify if necessary is increasingly critical. It will also prepare interested students for the pursuit of advanced degrees in engineering and technology at other institutions.

Methodology: The assessment process for the BS in Industrial Engineering Technology program is as follows:

- (1) Data from assessment tools (both direct–indirect, quantitative and qualitative) are collected and returned to the Department Head and ET ABET committee.
- (2) The Department Head and the ET ABET committee analyze the data to determine whether students have met measurable outcomes.
- (3) Results from the assessment are discussed with the program faculty.
- (4) In consultation with the Engineering Technology Advisory Board, the Department Head will propose changes to measurable outcomes, assessment tools for the next assessment period, and, where needed, curricula and program changes.

Student Learning Outcomes (SLOs):

Student learning outcome data were collected, analyzed, and reported for the Industrial Engineering Technology degree program. Measures used to collect data include reports, case studies, projects, exams, presentations, and written exercises. Assessment data for the academic cycle (AC) 2024-2025 show that targets were met or exceeded. Most of the students' performance indices for all SLOs were satisfactory. Action plans were devised for implementation in the next cycle for assessments where the targets were not met.

These results recommended several key actions, and decisions were made to enhance the student experience and learning outcomes, ensuring that students meet and exceed target expectations.

SLO 1. Ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve broadly defined industrial engineering problems (ETAC of ABET Outcome 1).

Course Map: Tied to the course syllabus objectives.

IET 4820: Production and Inventory Control (new Measure 1.1)

IET 4960 / EET 4950: Project Design II

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Measure 1.1. Every spring semester, students in IET 4820 are graded on their ability to develop and apply forecasting, EOA, reorder point, MRP, and inventory cost analysis techniques in a realistic business scenario. The acceptable target is 80% of students scoring at least 12 out of 16 on the rubric-based assessment of the assignment.

Finding: Target was met.

Analysis: In AC 2024–2025, the target was not met. Specifically, 10 of 14 students (71.4%) earned at least 12 out of 16 points (75%) on a rubric-based assessment associated with the assignment “Design and Solve a Rotary Table for Manufacturing Facilities” in IET 4700 course. Beginning in AC 2025–2026, this assessment was replaced with a new assessment administered in IET 4980. This change was implemented because IET 4700 is already designated for SLO 3 assessment, and IET 4820 became required following the most recent curriculum revision. The revised assessment structure provides a more appropriate alignment of student learning outcome measurements across the curriculum.

For the new assessment implemented in AC 2025–2026, 11 of 12 IET students (91.7%) scored at least 75% on the rubric-based assessment of the assignment, exceeding the established target. One student scored below the threshold. A review of the submission indicated that excessive reliance on AI-generated content, without adequate verification, revision, or alignment with the assignment requirements, resulted in deficiencies in the final report and a lower evaluation score. Overall, the assessment results demonstrate satisfactory student attainment of the learning outcome.

Decision: In AC 2025-2026, the target was met. Based on the results of AC 2025-2026, the faculty will implement the following changes in AC 2026-2027 to drive the cycle of improvement. First, the instructor will increase the assignment's rigor by incorporating more challenging analytical questions. Second, the business scenario for the assignment will be selected by the instructor rather than by the students. This change is intended to ensure greater consistency in the complexity, scope, and relevance of the assessment scenarios, thereby providing a more reliable measure of students' attainment of the learning outcome.

Measure 1.2. Every spring semester, upon submission of IET 4960 (or EET 4950) project reports, ET faculty evaluate student performance concerning their ability to apply industrial engineering technology knowledge, skills, and tools to real-world problem-solving. The acceptable target is that 80% of the students earned at least 80 out of 100 (80%) on the checklist-based assessment of the technical portion of the project report.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was not met. Two (2) out of 3 (66.66 %) of IET students met the criteria on the checklist-based assessment of the technical portion of the project report. Two students received more than 80% of the score compared to 79.17% for the remaining one student. Therefore, the target was not met. Based on the analysis of the AC 2024-2025 results, the instructor experimented with offering the EET 4960/IET 4960 course (Project Design 2) in person, with each team giving a 5- to 10-minute update on their progress every other week. This also allowed individual students to have one-on-one time

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with the instructor if technical aspects of their projects needed guidance or assistance.

As a result of the above experiment in AC 2025-2026, the target was met with five (5) out of 5 (100%) of IET students meeting the criteria on the checklist-based assessment of the technical portion of the project report.

Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 and to drive the cycle of improvement, the faculty will implement the following change in AC 2026-2027. The instructor will survey individual students with a self-appraisal of their capabilities that they bring into a team (*i.e.*, technical communication, data analysis, *etc.*). The instructor will use this self-reported information to form teams and better align those teams with an appropriately scoped capstone project.

SLO 2. Ability to perform tests, measurements, and experiments to analyze and improve processes. (ETAC of ABET Outcome 4).

Course Map: Tied to the course syllabus objectives. IET

3510: Methods and Work Design

IET 4720: Quality Control

Measure 2.1. Every fall semester, students' grades on the semester projects in IET 3510 are used to assess the attainment of SLO 2. The acceptable target is for 80% of students to score at least 12 out of 16 on the rubric-based assessment of the project.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was met. Of the 21 students completing the project, 100% (21 out of 21) scored at least 12 out of 16 (75%) on a rubric-based assessment of a group assignment. This demonstrated that the students were able to perform a time study.

Based on the analysis of AC 2024-2025 results, the faculty implemented the following changes in AC 2025-2026 to drive the cycle of improvement: 1) Introducing real-world case studies to enhance students' understanding of time study applications, and (2) adding a mid-way checkpoint for progress presentations by the groups to the instructor to get feedback so they can refine their projects before submission.

As a result of these changes in AC 2025-2026, the target was met. Ten (10) out of 11 (90.9%) students scored at least 12 out of 16 (75%) on a rubric-based assessment of a group assignment. Students were able to perform a pre-approved time study on an industrial activity. One group of students even applied allowances to the environmental factors. In this cycle, students use templates as guidance rather than final documents, and this was communicated to them clearly. One student could not finish the project at the required level due to his obligations in military training.

Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results, the faculty will implement the following changes in AC 2026-2027 to drive the cycle of improvement. The faculty will do the following: (1) Require that students incorporate environmental factors into the allowance. (2) Ensure that students provide a statistical justification

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to determine the optimal number of cycles included in the study to ensure it is conducted rigorously and authentically.

Measure 2.2. Every spring semester, students are graded on an assignment of creating, analyzing, and interpreting control charts for variables or attributes in IET 4720 to assess the attainment of SLO 2. The acceptable target is 80% of students scoring at least 75% (12 out of 16) on the rubric-based assessment of the assignment.

Finding: Target was not met.

Analysis: In AC 2024–2025, the target was met. Ten (10) out of 12 students (83.3%) scored at least 12 out of 16 (75%) on a rubric-based assessment of the control charts for variables assignment. Based on the analysis of AC 2024–2025, the instructor implemented several changes in AC 2025–2026 to support the cycle of continuous improvement. Specifically, the instructor incorporated a live, in-class walkthrough session using Minitab and Excel to demonstrate the application of Statistical Process Control (SPC) tools, followed by a guided practice session.

As a result of these changes in AC 2025–2026, the target was not met, with 40% (4 out of 10) of students scoring at least 12 out of 16 (75%) on the rubric-based assessment of the variable control charts assignment. Most students demonstrated difficulty understanding trial control limits and interpreting control charts after generating them using software such as Minitab. It also appeared that students were rushed, as the assignment was due during the final week of the semester, when they were likely managing competing obligations from other courses. Although students demonstrated a functional understanding of the software tools, many did not devote sufficient attention to formatting and presenting their responses in accordance with the rubric requirements.

Decision: In AC 2025–2026, the target was not met. Based on the analysis of the AC 2025–2026 results and to support the cycle of continuous improvement for AC 2026–2027, the instructor will implement additional strategies to strengthen students' understanding and performance in variable control charts. The instructor will incorporate a dedicated instructional component focused on interpreting trial control limits and analyzing control charts generated with software such as Minitab and Excel. Additional guided examples and practice exercises will be provided to reinforce students' conceptual understanding of Statistical Process Control tools and chart interpretation. In addition, the instructor will revise the assignment timeline to schedule it earlier in the semester to reduce the likelihood that students rush to complete the work during the final week of classes. The instructor will also emphasize rubric expectations and provide sample formatted responses to help students better understand the required structure and presentation of their work. These enhancements aim to improve students' conceptual understanding, interpretation skills, attention to rubric requirements, and overall performance on the rubric-based assessment.

SLO 3. Ability to design systems, components, or processes meeting specified needs related to industrial engineering technology discipline (ETAC of ABET Outcome 2).

Course Map: Tied to course syllabus objectives.

IET 4890: Operations Research (new Measure 3.1)

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IET 4700: Manufacturing Facilities

Starting Fall 2025, Measure 3.1 was replaced by the new Measure.

New **Measure 3.1.** Every fall semester, students' grades in Product Mix, Blending, or Supply Chain in IET 4890 are used to assess SLO 3 attainment. The acceptable target is for 80% of students to score at least 12 out of 16 (75%) on the rubric-based assessment of the assignment.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was not met. Only 16 out of 21 students (76%) scored at least 12 out of 16 (75%) on the rubric-based assessment in IET 3510 (Methods and Work Design) course. Based on the analysis of the AC 2024-2025 results, the faculty implemented the following changes in AC 2025-2026 to drive the cycle of improvement. These changes included 1) adding a practical ergonomics evaluation session in which students participated in cases where they analyzed ergonomic factors in a real or simulated workspace, (2) incorporating a progressive analysis approach, and (3) adding a critical analysis component in which students must compare their findings with established ergonomic guidelines (e.g., NIOSH, OSHA) and justify their recommendations. However, at the faculty meeting, it was decided that a real-world ergonomics industry project was sometimes difficult to secure, so the assessment was replaced with a new one based on the IET 4890 course.

In AC 2025-2026, the target was met. Thirteen (13) out of 13 students (100%) scored at least 12 out of 16 (75%) on the rubric-based assessment. Students were required to prepare a professional managerial report addressing a Product Mix optimization problem. The main body of the report focused on managerial interpretation and decision-making, while all technical components, including model formulation, programming code, and detailed calculations, were included in the appendix.

Through this assignment, students developed and applied new skills in optimization modeling, problem formulation, and quantitative decision-making. It also strengthened their ability to communicate technical results effectively to a managerial audience.

Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results and to drive the cycle of continuous improvement in AC 2026-2027, the instructor will implement the following changes: (1) add a session with students on how to prepare a managerial report, (2) emphasize more on the interpretation of results and sensitivity analysis to ensure students clearly connect quantitative findings to managerial decision-making.

Measure 3.2. Every spring semester, students are graded on a timed assignment of a warehouse lighting project in IET 4700 to assess the attainment of SLO 3. The acceptable target is 80% of students scoring at least 9 out of 12 (75%) on the rubric-based assessment of the assignment.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was met with 14 out of 14 (100%) of the students, scoring at least 9 out of 12 (75%) on the rubric-based assessment of the warehouse-lighting

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project. Based on the analysis of AC 2024-2025 results, the faculty implemented the following changes, in AC 2025-2026 to drive the cycle of continuous improvement. Each student in the group was required to submit an individual report, regardless of the group collaboration, and deliver an oral presentation on the project. This improved students' interpersonal communication skills and gave them a better understanding of their roles in group work and team-based challenges.

In AC 2025-2026, the target was met with 9 out of 9 (100%) of the students scoring at least 9 out of 12 (75%) on the rubric-based assessment of the warehouse-lighting project. As this was a group project with a maximum of 2 members in each group, the students worked in collaboration. However, the students did not follow the report template properly, and some students missed the technical drafting review session, so they submitted manual drafting without using the software.

Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results, the faculty will implement the following changes in AC 2026-2027 to drive the cycle of continuous improvement. The faculty will require that the students use Drawing Software for the project, make the report template mandatory, and include these requirements in the grading rubrics.

SLO 4. Ability to function effectively as a member of a team or as its leader (ETAC of ABET Outcome 5).

Course Map: Tied to the course syllabus objectives.

IET/EET 4940: Project Design I

IET 4960/EET 4950: Project Design II

Measure 4.1. Every fall semester, students in IET/EET 4940 assess their peers on a technical team with respect to their ability and skill as a member or a leader of the team based on a checklist-based peer-review survey. The acceptable target is that 80% of IET students are rated at least 20 out of 25 (80%) on a checklist-based peer-review survey.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was met, as 7 out of 7 (100%) of the students were rated at least 20 out of 25 (80%) on the checklist-based peer-review survey. Based on the analysis of the AC 2024-2025 results, the faculty implemented the following changes in AC 2025-2026 to drive the cycle of improvement:

- Peer review forms were administered six weeks before the finals and again during the final report submission deadline
- The course instructor sought opportunities for the team to participate in or attend professional or academic conferences together.

As a result of these changes, the target was met in AC 2025-2026. Five (5) out of 5 (100%) students were rated at least 20 out of 25 (80%) on the checklist-based peer-review survey. The dual administration of the peer-review process (midpoint and final) appears to have reinforced accountability and provided students with earlier opportunities to correct performance gaps.

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Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results and to drive the cycle of improvement, the following changes will be applied in AC 2026-2027. (1) A brief workshop on effective peer evaluation and constructive feedback will be incorporated early in the semester to enhance the quality and specificity of peer assessments. (2) Structured team reflection reports will be introduced after the mid-semester peer review to encourage corrective action and goal setting. (3) The instructor will continue to identify opportunities for teams to participate in or attend professional or academic conferences together, while also encouraging students to present their work when possible, to further develop professional communication and teamwork skills.

Measure 4.2. Every spring semester, the instructor of the course rates students in IET 4960/EET 4950 based on their abilities and skills as a member or a leader of the team on a checklist-based review survey. An instructor uses the overall impression of the team based on a semester-long interaction with the team to rate the team members and leaders. The acceptable target is that 80% of students are rated at least 20 out of 25 (80%) on a checklist-based survey.

Finding: Target was met.

Analysis: The target was met in AC 2024- 2025 with 6 out of 7 (86%) of students receiving scores of 80% or higher. Based on the analysis of the AC 2024-2025 results and to drive the cycle of improvement, the faculty implemented the following changes in AC 2025-2026: (1) The instructor collected biweekly feedback on team collaboration and mandated a weekly team meeting with the instructor. (2) The course grading policy included group participation in regional and/or national conferences as attending conferences as a group enhanced students' team cohesiveness and strengthens their communication skills.

As a result of these changes, in AC 2025-2026, the target was met with 5 out of 5 (100%) of students receiving more than 80% scores, thus meeting the criteria.

Decision: In 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results and to drive the cycle of improvement, the faculty will implement the following change in AC 2026-2027: (1) discuss aspects of teamwork in EET 4940/IET 4940 before project teams are assigned, (2) assign students to complete an initial survey to determine the following: i) available time commitment for coursework, capstone project, and outside responsibilities (*i.e.*, personal, work, student organizations, etc.), ii) student self-appraisal of their capabilities that they bring into a project team, and (3) utilization of the above information to form more complete teams and to better fit those teams with an appropriately scoped capstone project.

SLO 5. Ability to communicate effectively (ETAC of ABET Outcome 3).

Course Map: Tied to course syllabus objectives.

IET/EET 4940: Project Design I

IET 4960 / EET 4950: Project Design II

Measure 5.1. Every fall semester, upon presentation of capstone projects in IET/EET 4940,

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ET faculty evaluate student performance concerning the ability to communicate effectively in the oral presentation of the technical report. The acceptable target is for 80% of IET students to score at least 80 out of 100 points (80%) on a checklist-based assessment of the oral presentation.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was met as 7 out of 7 students (100%) of the IET students were rated by the ET faculty at least 80 out of 100 points (80%) on the checklist-based assessment of an oral presentation. Based on the analysis of AC 2024-2025 results, the faculty implemented the following change in AC 2025-2026 to drive the cycle of improvement. Along with the mid-term exam, the instructor required students to deliver an oral presentation on a randomly selected, pre-determined, and communicated topic as a necessary component of the mid-term grade. This approach aimed to foster peer-to-peer learning and provided an additional opportunity for students to practice and enhance their public presentation skills.

As a result of these changes, the target was met in AC 2025-2026 with 5 out of 5 (100%) of the IET students being rated by the ET faculty at least 80 out of 100 points (80%) on the checklist-based assessment of an oral presentation.

Decision: In AC 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results and to drive the cycle of improvement, faculty will implement the following change in AC 2026-2027. Along with the mid-term exam, the instructor will require students to deliver an oral presentation on their assigned project, aimed at improving student awareness of their project stakeholders' needs as well as displaying the team's current understanding of the problem they are trying to solve. This approach will allow the team to practice for their end-of-semester project presentation in a less stressful environment and to receive valuable feedback based on a similar checklist-based assessment.

Measure 5.2: Every spring semester, upon submission of capstone project reports in IET 4960 (or EET 4950), ET faculty evaluate students concerning their ability to draft a technical report using relevant literature, graphs, charts, results, and recommendations adhering to the format prescribed by the instructor to assess the attainment of SLO 5. The acceptable target is that 80% of IET students are rated at least 80 out of 100 points (80%) on a checklist-based assessment of the written project report.

Finding: Target was met.

Analysis: In AC 2024-2025, the target was not met as only 3 out of 7 (42.85%) of the students scored at least 80 out of 100 points (80%) on the checklist-based assessment of the written project report. Based on the analysis of the AC 2024-2025 results and to drive the cycle of improvement, the following changes were implemented in AC 2025-2026. The instructor included a training session on the effective use of AI tools for data analysis, graph plotting, grammar and language checking, referencing, and reference verification.

As a result of these changes, in AC 2025-2026, the target was met as 5 out of 5 (100%) of the IET students scored at least 80 out of 100 points (80%) on the checklist-based assessment of the written project report.

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Decision: In 2025-2026, the target was met. Based on the analysis of the AC 2025-2026 results and to drive the cycle of improvement, the following change will be implemented in AC 2026-2027. The individual components of the report will be divided into separate assignments, allowing focus and feedback on each element. This will be in addition to and support of the full written report assignment due at semester's end.

Comprehensive Summary of the Key Evidence of Improvement Based on Analysis of Results:

The following reflects all the changes implemented to drive the continuous process of seeking improvement in AC 2025-2026. These changes are based on the knowledge gained through the analysis of AC 2024-2025 results.

- In IET 4700 (SLO 1), the instructor made the assignment available and discussed it earlier in the semester, providing a well-organized report template that included a similar exercise solved in class using the same format.
- In IET 4960/EET 4950 (SLO 1), the instructor offered the EET 4960/IET 4960 course (Project Design 2) in person, with each team giving a 5-to-10-minute update on their progress every other week. This also allowed individual students to have one-on-one time with the instructor if technical aspects of their projects needed guidance or assistance.
- In IET 3510 (SLO 2), the instructor of IET 3510 introduced 1) real-world case studies to enhance students' understanding of time study applications, and 2) added a mid-way checkpoint for progress presentations by the groups to the instructor to get feedback so they can refine their projects before submission.
- In IET 4720 (SLO 2), the instructor introduced and implemented the following changes. The instructor incorporated a live, in-class walkthrough session using Minitab and Excel to demonstrate the application of Statistical Process Control (SPC) tools, followed by a guided practice session.
- In IET 3510 (SLO 3), the following changes were incorporated into the course by the instructor: They included: 1) adding a practical ergonomics evaluation session in which students participated in cases where they analyzed ergonomic factors in a real or simulated workspace, (2) incorporating a progressive analysis approach, and (3) adding a critical analysis component in which students must compare their findings with established ergonomic guidelines (e.g., NIOSH, OSHA) and justify their recommendations.
- In IET 4700 (SLO 3), the faculty required each student in the group to submit an individual report, regardless of the group collaboration, and deliver an oral presentation on the project to foster interpersonal communication skills and increased awareness of their individual roles.
- In IET / EET 4940 (SLO 4), peer review forms were administered six weeks before

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the finals and again during the final-report submission deadline. The course instructor sought opportunities for the team to participate in or attend professional or academic conferences together.

- In IET 4960 / EET 4950 (SLO 4), the instructor implemented the following: (1) The instructor collected biweekly feedback on team collaboration and mandated a weekly team meeting with the instructor. (2) The course grading policy included group participation in regional and/or national conferences. (3) Attending conferences as a group was encouraged to enhance students' team cohesiveness and strengthened their communication skills.
- In IET /EET 4940 (SLO 5), along with the mid-term exam, the instructor required students to deliver an oral presentation on a randomly selected, predetermined, and communicated topic as a necessary component of the mid-term grade. This approach aimed to foster peer-to-peer learning and provide an additional opportunity for students to practice and enhance their public presentation skills.
- In IET 4960 / EET 4950 (SLO 5), the instructor included a training session on the effective use of AI tools for data analysis, graph plotting, grammar and language checking, referencing, and reference verification.

Plan of action moving forward:

- In IET 4820 (SLO 1), the instructor will increase the assignment's rigor by incorporating more challenging analytical questions, and the business scenario for the assignment will be selected by the instructor to ensure greater consistency in the complexity, scope, and relevance of the assessment scenarios, thereby providing a more reliable measure of students' attainment of the learning outcome.
- In IET 4960/EET 4950 (SLO 1), the instructor will survey individual students with a self-appraisal of their capabilities that they bring into a team (*i.e.*, technical communication, data analysis, *etc.*). The instructor will use the above information to form teams and better align those teams with an appropriately scoped capstone project.
- In IET 3510 (SLO 2), the instructor of IET 3510 will require students to have (1) environmental factors incorporated into the allowance, and (2) a statistical justification to determine the optimal number of cycles to be included in the study to ensure it is conducted rigorously and authentically.
- In IET 4720 (SLO 2), the instructor will introduce additional strategies to reinforce student understanding and performance. The instructor will incorporate a dedicated instructional component with guided examples focused on interpreting trial control limits and analyzing control charts generated with software. In addition, the instructor will revise the assignment timeline by scheduling it earlier in the semester to reduce the likelihood that students rush to complete the work during the final week of classes. The instructor will also emphasize rubric expectations and provide sample formatted responses to help students better understand the

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required structure and presentation of their work.

- In IET 4890 (SLO 3), the following changes are to be incorporated into the course by the instructor: (1) a session will be added with students on how to prepare a managerial report, (2) an emphasis will be placed on the interpretation of results and sensitivity analysis to ensure students clearly connect quantitative findings to managerial decision-making.
- In IET 4700 (SLO 3), the instructor will implement the following changes. The faculty will make the use of Drawing Software mandatory, the use of the report template will be made mandatory, and these mandated changes will be incorporated into the grading rubrics.
- In IET/EET 4940 (SLO 4), the instructor will implement the following changes: (1) A brief workshop on effective peer evaluation and constructive feedback will be incorporated early in the semester to enhance the quality and specificity of peer assessments. (2) Structured team reflection reports will be introduced after the mid-semester peer review to encourage corrective action and goal setting. (3) The instructor will continue to identify opportunities for teams to participate in or attend professional or academic conferences together, while also encouraging students to present their work when possible to further develop professional communication and teamwork skills.
- In IET 4960/EET 4950 (SLO 4), the instructor will (1) discuss aspects of teamwork in EET 4940/IET 4940 before project teams are assigned, (2) assign students to complete an initial survey, and (3) this information will be used by the instructor to form more complete teams and to better fit those teams with an appropriately scoped capstone project.
- In IET/EET 4940 (SLO 5), along with the mid-term exam, the instructor will require students to deliver an oral presentation on their assigned project. This will help improve student awareness of their project stakeholders' needs as well as display the team's current understanding of the problem they are trying to solve. This approach will allow the team to practice their end-of-semester project presentation in a less stressful environment and receive valuable feedback from a similar checklist-based assessment.
- In IET 4960/EET 4950 (SLO 5), the individual components of the report will be divided into separate assignments, allowing focus and feedback on each element. This will be in addition to and support of the full written report assignment due at semester's end.