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

Department of Engineering and Technology

College of Arts and Sciences

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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 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.

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 4700: Manufacturing Facilities
IET 4960 / EET 4950: Project Design II

Measure 1.1. Every spring semester, students are graded using a rubric on their ability to design and solve rotary tables for manufacturing facilities in IET 4700. 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 not met.

Analysis: In AC 2023-2024, the target was met. Five (5) out of 6 (83%) of the students scored at least 12 out of 16 (75%) on a rubric-based assessment of the assignment on "design and solve rotary table for manufacturing facilities". Based on the analysis of the AC 2023- 2024 results, the faculty implemented the following changes in AC 2024-2025 to drive the cycle of improvement. The instructor made a template for the report writing and supplied that template before assigning the project. The instructor also solved a similar exercise in the class. However, the threshold for the performance level was not maintained.

As a result of the changes, the target was not met in AC 2024-2025. Ten (10) out of 14 (71.4%) of the students scored at least 12 out of 16 (75%) on a rubric-based assessment of the assignment on "design and solve rotary table for manufacturing facilities." Two students did not attend the relevant class lectures, failed to submit the assignment, and ultimately did not pass the course. Additionally, two students did not adhere to the required format despite being provided with a report template. Several students also reported difficulty managing their time due to overlapping assignment deadlines in other courses toward the end of the semester.

Decision: In 2024-2025, the target was not met. Based on the results of AC 2024-2025, the faculty will implement the following changes in AC 2025-2026 to drive the cycle of improvement. The instructor will make the assignment available and discuss it earlier in the semester providing a well-organized report template that includes a similar exercise solved in class using the same format.

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 not met.

Analysis: In AC 2023-2024, the target was not met. Two (2) out of 3 (66.66 %) of IET students meeting 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 AC 2023-2024 results, the faculty made the following changes. The instructors of the course developed a bi-weekly self-report form to ensure students hit milestones on time, reported any rising issues, and provided any required feedback on time.

As a result of these changes, in AC 2024-2025, the target was not met. Three (3) out of 7 (43 %) of IET students met the criteria on the checklist-based assessment of the technical portion of the project report. Two student groups worked with different industries. One group of three members performed well, while the other group of four faced challenges with team cohesion and participation. The designated leader of the latter group gradually stopped

contributing, particularly in data collection, and ultimately failed the course. This group also missed multiple scheduled meetings with the instructor and could not submit the required bi-weekly progress reports. However, in the second half of the semester, another member assumed leadership and ensured that the group met the minimum requirements to complete the project.

Decision: In AC 2024-2025, the target was not met. Based on the analysis of the AC 2024-2025 and to drive the cycle of improvement, the faculty will implement the following changes in AC 2025-2026. The instructor will collect feedback on team collaboration every two weeks and require a mandatory weekly team meeting with the instructor. Additionally, the course grading policy will incorporate regional and/or national conference attendance, increasing the students' communication skills and overall performance after receiving feedback from other institutions, faculty, and peers.

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 2023-2024, the target was met. Ten (10) out of 12 (83%) of the students scored at least 12 out of 16 (75%) on a rubric-based assessment of a group assignment. Students were able to perform a time study on the real industry sponsor's site.

Based on the analysis of AC 2023-2024 results, the faculty implemented the following changes in AC 2024-2025 to drive the cycle of improvement. The instructor encouraged students to view templates as flexible frameworks for organizing their ideas, allowing room for creativity while ensuring all essential components were incorporated. They provided at least one feedback session where students could share their customized adaptations of the templates and received guidance on effectively balancing structure with creative expression.

As a result of these changes in AC 2024-2025, the target was met. All (21 out of 21 or 100%) students scored at least 12 out of 16 (75%) on a rubric-based assessment of a group assignment. Students were able to perform a time study pre-approved industrial activity. Students learned how to work in a group. They also gained knowledge on conducting formal time studies. In this cycle, students utilize templates as guiding documents rather than the final documents.

Decision: In AC 2024-2025, the target was met. Based on the analysis of the AC 2024-2025 results, the faculty will implement the following changes in AC 2025-2026 to drive the cycle of improvement. The faculty will do the following: (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.

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 who score at least 75% (12 out of 16) on the rubric-based assessment of the assignment.

Finding: Target was met.

Analysis: In AC 2023-2024, the target was met. Ten (10) out of 12 (83.3%) of the students scored at least 12 out of 16 (75%) on a rubric-based assessment of the assignment on control charts for variables. Based on the analysis of AC 2023-2024, the instructor implemented the following changes in AC 2024-2025 to drive the cycle of continuous improvement. The instructor introduced and implemented the following changes. The instructor introduced tutorial videos detailing the step-by-step process for solving control charts for variables, including solving several practice problems. Students could review the concepts of control charts for variables and refresh their skills using Minitab software and Excel for Statistical Process Control (SPC).

As a result of these changes in AC 2024-2025, the target was met with 83.3% (10 out of 12) of the students scoring at least 12 out of 16 (75%) on a rubric-based assessment of the assignment on control charts for variables. One of the remaining two students did not attempt the assignment due to personal challenges, while the other, a full-time employee, prioritized job responsibilities over academic performance.

Decision: In the AC 2024-2025, the target was met. Based on the analysis of the AC 2024–2025 results and to drive the cycle of continuous improvement for AC 2025–2026, the instructor will introduce additional strategies to reinforce student understanding and performance. A series of interactive, low-stakes quizzes will be integrated into the Moodle platform to help students assess their grasp of control charts for variables at multiple stages of the learning process. Each quiz will be aligned with key concepts and include immediate feedback. In addition, the instructor will incorporate a live, in-class walkthrough session using Minitab and Excel to demonstrate the application of Statistical Process Control tools, followed by a guided practice session. These enhancements aim to improve conceptual understanding and increase student engagement and 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 3510: Methods and Work Design
IET 4700: Manufacturing Facilities

Measure 3.1. Every fall semester, students' grades on the "assignment on ergonomics principles in a workplace" in IET 3510 are used to assess the attainment of SLO 3. 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 not met.

Analysis: In AC 2023-2024, the target was not met. Only 9 out of 12 students (75%) scored at least 12 out of 16 (75%) on the rubric-based assessment. Based on the analysis of the AC 2023-2024 results, the faculty implemented the following changes in AC 2024-2025 to drive the cycle of improvement. These changes included (1) providing more explicit instructions on incorporating personal observations into reports and relating them to specific principles and guidelines, (2) implementing a more organized schedule to alleviate strain from concurrent projects, ensuring students have ample time for each assignment, and (3) promoting collaborative learning where applicable, leveraging diverse perspectives for improved outcomes.

Despite these changes in AC 2024-2025, the target was still not met. Only 16 out of 21 students (76%) scored at least 12 out of 16 (75%) on the rubric-based assessment. The assignment was conducted individually this year; one student did not submit their work. Additionally, a few students struggled with direction or appeared confused. Some started the assignment late, rushed through report writing, and treated the template as a rigid blueprint rather than a flexible guide, resulting in a lack of customization and creativity.

Decision: In AC 2024-2025, the target was not met. Based on the analysis of the AC 2024-2025 results and to drive the cycle of continuous improvement, in AC 2025-2026, the instructor will implement the following changes: (1) Adding a practical ergonomics evaluation session in which students will participate in cases where they analyze ergonomic factors in a real or simulated workspace. This activity will help them understand assessment methods before applying them to their projects. (2) Incorporating a progressive analysis approach in which students will be asked to analyze the situation in steps to cover different areas of consideration so a thorough assessment and analysis can be done. (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. This activity will encourage deeper engagement with the subject and prevent surface-level report writing.

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 who score at least 9 out of 12 (75%) on the rubric-based assessment of the assignment.

Finding: Target was met.

Analysis: In AC 2023-2024, the target was met with 6 out of 6 (100%) of the students, scoring at least 9 out of 12 (75%) on the rubric-based assessment of the warehouse-lighting project. Based on the analysis of AC 2023-2024 results, the faculty implemented the following changes, in AC 2024-2025, to drive the cycle of continuous improvement. The faculty provided a template for report writing and revisited the drawing software to prepare the students for the required drawing of the room and the light fixtures layout.

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 project.

As this was a group project, students divided the workload and worked on different report sections before compiling it into a final submission. However, some students did not understand the calculations or sections completed by their teammates, which became evident during the exam. Assigning the project earlier in the semester allowed students more time to work on it, helping them successfully meet their learning objectives.

Decision: In AC 2024-2025, the target was met. Based on the analysis of the AC 2024-2025 results, the faculty will implement the following changes in AC 2025-2026 to drive the cycle of continuous improvement. The instructor will implement the following changes. Each student in the group will be required to submit an individual report, regardless of the group collaboration, and deliver an oral presentation on the project. This will improve the students' interpersonal communication skills and provide the students with the opportunity to better understand their role in group work and team-based challenges.

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 2023-2024, the target was met. The target was met, as 3 out of 3 (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 2023-2024 results, the faculty implemented the following changes in AC 2024-2025 to drive the cycle of improvement. Peer review forms were required to be submitted for pre-evaluation at least two weeks before the final report submission deadline. Furthermore, students were asked to attend professional and academic conferences together promoting interaction, team cohesiveness, and teamwork.

As a result of these changes, the target was met in AC 2024-2025. In AC 2024- 2025, 7 out of 7 (100%) students were rated at least 20 out of 25 (80%) on the checklist-based peer-review survey. The instructor observed a positive shift in team dynamics, characterized by increased responsibility, heightened self-awareness of individual contributions, and improved cohesiveness.

Decision: In AC 2024-2025, the target was met. Based on the analysis of the AC 2024-2025 results and to drive the cycle of improvement, the following changes will be applied in AC 2025-2026. Peer review forms will be administered six weeks before the finals and again during the final-report submission deadline. The instructor of the course will look for opportunities for the team to participate in or attend professional or academic conferences together. Attending conferences in a group will help students improve their team cohesiveness and communication skills.

Measure 4.2. Every spring semester, the instructor of the course rates students in IET 4960 / EET 4950 based on their ability and skill as a member or a leader of the team on a checklist-based review survey. An instructor will use 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: In AC 2023-2024, the target was not met with 2 out of 3 (66.6%) of students receiving more than 80%. Based on the analysis of the AC 2023- 2024 results, the faculty implemented a new form to ensure no serious issues among the group by continuously monitoring the performance by developing and using the bi-weekly self-report form.

As a result of these changes, the target was met in AC 2024- 2025 with 6 out of 7 (86%) of students receiving more than 80% scores, thus meeting the criteria. One student who initially served as the team leader ceased participating in the project and ultimately failed the course. Additionally, two other students from separate groups received lower scores, each earning around 80%.

Decision: In 2024-2025, the target was met. Based on the analysis of the AC 2024-2025 results, and to drive the cycle of improvement, the faculty will implement the following change in AC 2025-2026. The instructor will collect biweekly feedback on team collaboration and mandate a weekly team meeting with the instructor. Additionally, the course grading policy will include group participation in regional and/or national conferences. Attending conferences as a group enhances students' team cohesiveness and strengthens their communication skills.

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, 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 (80%) on a checklist-based assessment of the oral presentation.

Finding: Target was met.

Analysis: In AC 2023-2024, the target was met. The target was met as 3 out of 3 (100%) of the IET students were rated at least 80 out of 100 (80%) on the checklist-based assessment of an oral presentation by the ET faculty. Based on the analysis of AC 2023-2024 results, the faculty implemented the following change in AC 2024-2025 to drive the cycle of improvement. Students were encouraged to participate in professional and academic conferences for oral and/or poster presentations before their final presentation in the ET department. The instructor and the project supervisors began sending students to

the UL Academic Summit, NSU Research Day, and IEOM conferences.

As a result of these changes, the target was met in AC 2024-2025 with 7 out of 7 (100%) of the IET students being rated at least 80 out of 100 (80%) on the checklist-based assessment of an oral presentation by the ET faculty.

Decision: In AC 2024-2025, the target was met. Based on the analysis of the AC 2024-2025 results and to drive the cycle of improvement, faculty will implement the following change in AC 2025-2026. Along with the mid-term exam, the instructor will require 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 aims to foster peer-to-peer learning and provide an additional opportunity for students to practice and enhance their public presentation skills.

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 (80%) on a checklist-based assessment of the written project report.

Finding: Target was not met.

Analysis: In AC 2023-2024, the target was met with 3 out of 3 (100%) of the students scoring at least 80 out of 100 (80%) on the checklist-based assessment of the written project report. Based on the analysis of the AC 2023- 2024 results, in AC 2024-2025, the instructors of the course encouraged students to use AI apps (such as AI-Powered Writing Assistant by Grammarly and the AI-Document Editor by Canva) to help them write effectively.

Despite these changes 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 (80%) on the checklist-based assessment of the written project report. Four (4) out of 7 students (57.15%) in one group scored slightly below 80% on the checklist-based evaluation of the written project report. This was partly due to the group's initial leader ceasing participation and an overreliance on a generative AI tool without adequately verifying the generated content.

Decision: In 2024-2025, the target was not met. Based on the analysis of the AC 2024-2025 results and to drive the cycle of improvement, the following changes will be implemented in AC 2025-2026. The instructor will include a training session on the effective use of AI tools for data analysis, graph plotting, grammar and language checking, referencing, and reference verification.

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 2024-2025. These changes are based on the knowledge gained through the analysis of AC 2023-2024 results.

- In IET 3510 (SLO 2), the instructor of IET 3510 (1) encouraged students to view templates as flexible frameworks for organizing their ideas, allowing room for creativity while ensuring all essential components were incorporated. The instructor provided at least one feedback session where students could share their customized adaptations of the templates and receive guidance on effectively balancing structure with creative expression.

- In IET 3510 (SLO 3), the following changes were incorporated into the course by the instructor: They included: (1) providing more explicit instructions on incorporating personal observations into reports and relating them to specific principles and guidelines, (2) implementing a more organized schedule to alleviate strain from concurrent projects, ensuring students have ample time for each assignment, and (3) promoting collaborative learning where applicable, leveraging diverse perspectives for improved outcomes.

- In IET / EET 4940 (SLO 4), peer review forms must be submitted for pre-evaluation at least two weeks before the final report submission deadline. Furthermore, students were asked to attend professional and academic conferences together, promoting interaction, team cohesiveness, and teamwork.

- In IET /EET 4940 (SLO 5), students were encouraged to participate in professional and academic conferences for oral and/or poster presentations before their final presentation in the ET department. The instructor and the project supervisors began sending students to the UL Academic Summit, NSU Research Day, and IEOM conferences

- In IET 4700 (SLO 1), the instructor made a template for the report writing and supplied that template before assigning the project. The instructor also solved a similar exercise in the class, yet the performance level was not achieved.

- In IET 4700 (SLO 3), the faculty provided a template for report writing and revisited the drawing software to prepare the students for the required drawing of the room and the light fixtures layout.

- In IET 4720 (SLO 2), the instructor introduced and implemented the following changes. The instructor introduced tutorial videos detailing the step-by-step process for solving control charts for variables, including solving several practice problems. Students could review the concepts of control charts for variables and refresh their skills using Minitab software and Excel for Statistical Process Control (SPC).

- In IET 4960 / EET 4950 (SLO 1), the instructors of the course developed a bi-weekly self-reported form to ensure students hit milestones on time, report any rising issues, and provide any required feedback on time.

- In IET 4960 / EET 4950 (SLO 4), the instructor implemented a new form to ensure no serious issues among the group by continuously monitoring the performance by developing and using the bi-weekly self-report form.

- In IET 4960 / EET 4950 (SLO 5), the instructors of the course encouraged students to use AI apps to help them write effectively—for example, the AI-powered Writing Assistant by Grammarly and the AI-Document Editor by Canva.

Plan of action moving forward:

- In IET 3510 (SLO 2), the instructor of IET 3510 (1) will explain how a professional technical report should be prepared, (2) will provide a downloadable template on the learning management system, and (3) will offer additional review(s) of the draft and/or practice sessions for any required calculations.

- In IET 3510 (SLO 3), the following changes are to be incorporated into the course by the instructor: (1) students will be asked to provide appropriate theoretical background in their report with a relevant brief review of the chapters related to the ergonomics principles, (2) students will show the relevant guidelines to make their case for their recommended design attributes, and 3) the instructor will review any report before the due date.

- In IET / EET 4940 (SLO 4), the capstone project group leader will meet one-on-one with team members who show the first signs of non-participation or reduced participation in team-related activities. The group leader will also indicate the expectations of each member to deliver their part of the group assignment on time. In case of a persistent problem, the group leader will inform the course instructor(s) immediately. The instructor(s) will then meet with the individual(s) to explain the consequences of unsatisfactory participation. The instructor will also remind students that 20% of the semester grade will be attributed to professionalism, which could adversely affect their grades due to poor student conduct. This approach will be a last resort after all efforts to motivate the students have been exhausted.

- In IET / EET 4940 (SLO 5), the addition of the mandatory presentation on a randomly selected topic will provide each student with experience in researching a topic, preparing their presentation, and delivering their message to the class. This will provide an additional assessment to be counted towards students' mid-term grades outside of the exam.

- In IET 4700 (SLO 1), the instructor will make the assignment available and discuss it earlier in the semester, providing a well-organized report template that includes a similar exercise solved in class using the same format.

- In IET 4960 / EET 4950 (SLO 1), the instructor will collect feedback on team collaboration every two weeks, and a mandatory weekly team meeting with the instructor is required. Additionally, the course grading policy will incorporate

- regional and/or national conference attendance.

- In IET 4720 (SLO 2), the instructor will introduce additional strategies to reinforce student understanding and performance. A series of interactive, low-stakes quizzes will be integrated into the Moodle platform to help students assess their grasp of control charts for variables at multiple stages of the learning process. Each quiz will be aligned with key concepts and include immediate feedback. In addition, the instructor will incorporate a live, in-class walkthrough session using Minitab and Excel to demonstrate the application of Statistical Process Control tools, followed by a guided practice session. These enhancements aim to improve conceptual understanding and increase student engagement and performance on the rubric-based assessment.

- In IET 4700 (SLO 3), the instructor will implement the following changes: each student in the group will be required to submit an individual report, regardless of the group collaboration, and deliver an oral presentation on the project.

- In IET 4960/ EET 4950 (SLO 4), the instructor will collect biweekly feedback on team collaboration and mandate a weekly team meeting with the instructor. Additionally, the course grading policy will include group participation in regional and/or national conferences.

- In IET 4960 / EET 4950 (SLO 5), the instructor will include a training session on the effective use of AI tools for data analysis, graph plotting, grammar and language checking, referencing, and reference verification.