Academic Program Assessment
AY 2025-2026 [Due 6/1/26]

Program Name	Date Completed
Master of Science in Mechatronics Engineering (MSME)	**5/28/2026**
Report Completed By	Report Contributors
Nebojsa Jaksic, Ph.D., P.E.	**Drs. Bedoya-Valencia and Duong**
Brief Statement of Program Mission and Goals	
To provide advanced knowledge and develop advanced skills of mechatronics to engineers	

Table I Closing the Loop

Report on at least one data-informed change to your curriculum during AY 2025-2026 that was implemented to improve student learning, in response to prior assessment cycles or other data.

A. Describe issues or SLOs addressed in the AY 2025-2026 cycle. Paste SLOs verbatim below.
Analyze and/or design a mechatronic system
B. In which prior academic year and semester was this SLO last assessed to generate data that informed the change(s) this year?
Spring 2025
C. What were the recommendations for change in the previous cycle?
There were no recommendations for change for AY 2025-2026
D. How were the recommendations for change acted upon?
n/a
E. How did the change(s) implemented impact student learning? If the change was not effective, what are the next steps or new recommendations?
n/a

Enter Comments on Table I Closing the Loop Below

A. Describe issues or SLOs addressed in the AY 2025-2026 cycle. Paste SLOs verbatim below.
Apply advanced engineering principles in the design and analysis of a system or process to meet specified needs
B. In which prior academic year and semester was this SLO last assessed to generate data that informed the change(s) this year?
Spring 2025
C. What were the recommendations for change in the previous cycle?
Providing additional instructions on Linux, Python, LLMs, prompt engineering, and Agentic AI
D. How were the recommendations for change acted upon?
In EN 563 Intelligent Robotics course, learning modules on Linux and Python were provided to students. In EN 513 Artificial Intelligence course, a set of lectures on prompt engineering were developed and implemented. One of the final exam problems dealt with prompt engineering.
E. How did the change(s) implemented impact student learning? If the change was not effective, what are the next steps or new recommendations?
The above changes had no impact on student learning. However, they improved student programming skills and prompt engineering skills. These new knowledge domains are essential for modern mechatronics engineering practice.

Enter Comments on Table I Closing the Loop Below

A. Describe issues or SLOs addressed in the AY 2025-2026 cycle. Paste SLOs verbatim below.
Communicate effectively in writing and orally.
B. In which prior academic year and semester was this SLO last assessed to generate data that informed the change(s) this year?
Spring 2025
C. What were the recommendations for change in the previous cycle?
Based on generative AI tools evolution, educational strategies and methods must change to reflect changes in academic environments. While not discussed yet, prompt engineering may become a part of necessary person-computer communication skills.
D. How were the recommendations for change acted upon?
Prompt engineering and Gen AI were introduced in EN 519 course as a method to increase communication skills with LLMs.
E. How did the change(s) implemented impact student learning? If the change was not effective, what are the next steps or new recommendations?
Students became proficient with many new prompt engineering methods in searching and using LLMs. However, agenting AI methods were not explored in this cycle.

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Table II Annual assessment of Student Learning Outcomes (SLOs) in AY 2025-26

1. Include information to share assessment processes, results, and recommendations for improved student learning. Copy this table for each assessed outcome.

A. Program SLO(s) assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
Analyze and/or design a mechatronic system
B. Semester and year this SLO was previously reported on before this cycle.
Spring 2025
C. Describe the assessment method for this SLO(s).
EN 563: two exams and a project
D. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
Four MSME second year graduate students who were enrolled in Spring 2026
E. Explain the expected proficiency level and proportion of students who should reach this level.
At least 80% of the students should meet or exceed expectations (have a total class score 80% or higher)
F. Provide Assessment results and number of students who met defined proficiency level.
Three out of four students met or exceeded expectations.
G. Describe what the results or trends indicate about student performance.
The student that did not perform well comes from a different engineering discipline (civil engineering) and may lack proper prerequisites.
H. Describe program level changes/improvements planned for next AY (2026-2027?) which are informed by this assessment.
A stricter enforcement of prerequisites will be implemented in cases of students from different engineering backgrounds.

Enter Comments on Table II AY 2026 Assessment Below

2.

I. Program SLO(s) assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
Apply advanced engineering principles in the design and analysis of a system or process to meet specified needs
J. Semester and year this SLO was previously reported on before this cycle.
Spring 2025
K. Describe the assessment method for this SLO(s).
Methods: EN 561 final project and/or homework assignments, EN 513 homework assignments and mini projects
L. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
Three MSME second year graduate students who were enrolled in Fall 2025/Spring 2026
M. Explain the expected proficiency level and proportion of students who should reach this level.
At least 80% of the students should meet or exceed expectations
N. Provide Assessment results and number of students who met defined proficiency level.
All students in EN 561 were able to apply correct state-space design strategy under given constraints. They were able to demonstrate their knowledge when solving complicated problems. Also, all students in EN513 could apply appropriate modern AI/ML methods, tools and technologies to solve engineering problems, analyze data, and interpret results.
O. Describe what the results or trends indicate about student performance.
All students performed well.
P. Describe program level changes/improvements planned for next AY (2026-2027?) which are informed by this assessment.
We will continue to implement novel engineering practices using AI tools

Enter Comments on Table II AY 2026 Assessment Below

3.

Q. Program SLO(s) assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
Communicate effectively in writing and orally.
R. Semester and year this SLO was previously reported on before this cycle.
Spring 2025
S. Describe the assessment method for this SLO(s).
Methods: EN 593: Written reports and oral presentations EN 507: Project report evaluation EN 513: Proficiency using prompt engineering methods - exam EN 563: Review paper evaluation
T. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
Three MSME students who were enrolled in Fall 2025/ Spring 2026
U. Explain the expected proficiency level and proportion of students who should reach this level.
At least 80% of the students should meet or exceed expectations
V. Provide Assessment results and number of students who met defined proficiency level.
The students in EN 507 wrote a project report. They all (100%) exceeded the expectation for this SLO. The students in EN 563 wrote a review paper on a robotics topic. They all (100%) met the expectation for this SLO. The students in EN 593 wrote literature reviews, academic critiques on thesis and dissertations, and did presentations each on a potential topic for their master thesis. 100% of the students exceeded the expectation for this SLO.
W. Describe what the results or trends indicate about student performance.
All MSME students met or exceeded expectations.
X. Describe program level changes/improvements planned for next AY (2026-2027?) which are informed by this assessment.
While not directly informed by this assessment, new generative AI tools using prompt engineering methods and agentic AI will be addressed.

Enter Comments on Table II AY 2026 Assessment Below

MSME Assessment Rubrics

Analyze and/or design a mechatronic system

	Exceeds expectations 5%	Meets expectations 75%	Does not meet expectations 20%
Design Strategy	Develops a design strategy, including a plan; decomposes work into subtasks, and develops a timetable.	Uses a design strategy with guidance.	No design strategy is attempted.
Solutions	Develops several potential designs and based on the analysis of those designs finds an optimal design solution using the system view approach.	Can develop and compare multiple solutions to a mechatronic design problem, but does not usually arrive at the best result; conducts optimization but neglects one or two key aspects. Does not use the system view approach.	Cannot design a mechatronic system or individual component without a significant amount of help. Only focuses on one solution to a problem; no optimization attempted.
Tools	Uses computer tools and engineering resources effectively.	There is evidence of mostly correct use of computer tools and engineering resources.	There is no evidence of use of computer tools and engineering resources.

Apply advanced engineering principles in the design and analysis of a system or process to meet specified needs

	Exceeds expectations 5%	Meets expectations 75%	Does not meet expectations 20%
Design Strategy	Develops a design strategy, including a plan; decomposes work into subtasks, and develops a timetable.	Uses a design strategy with guidance.	No design strategy is attempted.
Constraints	Develops a solution that includes all realistic constraints.	Develops a solution that fails to include one or more minor realistic constraints.	There is no consideration of realistic constraints.

Communicate effectively in written form

	Exceeds expectations 5%	Meets expectations 75%	Does not meet expectations 20%
Articulation	Articulates ideas clearly and concisely using visual aids where appropriate.	Articulates ideas, but the idea flow is somewhat disjointed. Does not always use visual aids appropriately (e.g. a table and a graph representing the same information are used; a figure is not addressed in the narrative).	Does not develop/articulate ideas well. Makes points that are hard to understand. Does not use visual aids.
Organization	Organizes the material in a logical sequence (paragraphs, subheading, etc.).	In general, organizes the material well; however, occasionally paragraphs combine multiple thoughts. Does not identify sections and sub-sections clearly.	Imposes little or no structure or organization; does not use subheadings or proper paragraph structure.
Neatness	Presents material neatly and professionally.	Occasionally, does not present material neatly.	Does not present material neatly.
Grammar and Spelling	Uses grammar and spelling correctly.	Makes one or two spelling/grammar errors per page.	Makes spelling/grammar errors throughout more than 1/3 of the paper.
Writing Style	Uses professional writing style.	Sometimes uses jargon, improper voice, improper tense, inappropriate style, etc.	Uses inappropriate writing style for the audience and for the assignment.
Document Formatting	Conforms to the prescribed format.	Conforms to the prescribed format in many portions of the assignment.	Does not follow the prescribed format.

Communicate effectively in oral form

	Exceeds expectations 5%	Meets expectations 75%	Does not meet expectations 20%
Delivery	Plans and delivers an oral presentation effectively; applies the principle of "tell them."	Presents key elements of an oral presentation adequately but does not apply "tell them" clearly.	Organizes the presentation poorly (e.g. no clear introduction or summary is delivered).
Length and Detail	Presents technical content appropriate for the time allowed and the audience level.	Presents excessive or insufficient detail for time allowed and/or the audience level.	Presents for an inappropriately short or long period; omits key results during the presentation.
Mechanics	Makes eye contact; can be easily heard; speaks comfortably with minimal prompts; does not block the screen; doesn't show any distracting habits.	Exhibits minor difficulties (e.g. makes sporadic eye contact; occasionally is difficult to hear or understand; overuses prompts or does not use prompts enough; occasionally stumbles or loses place; occasionally blocks the screen; occasionally exhibits some distracting habits (um, ah, clicking pointer, etc.)).	Exhibits major difficulties with the presentation (e.g. makes no eye contact; is difficult to hear or understand; reads from prepared script; blocks the screen; exhibits distracting habits (um, ah, clicking pointer, etc.)).
Dialect	Uses proper American English.	Occasionally uses an inappropriate style of English-too conversational; uses understandable English.	Uses poor English and/or poor pronunciation.
Visual Aides	Uses visual aides effectively.	Presents visual aides that have minor errors or are not always clearly visible.	Presents multiple slides that are unclear or incomprehensible.
Appearance	Exhibits professional appearance.	Appears too casual for a professional presentation.	Appears inappropriately dressed for the occasion (e.g. wears shorts, sandals, etc.)
Listening and Response to Questions	Listens carefully and responds to questions appropriately; is able to explain and interpret results for various audiences and purposes.	Sometimes misunderstands questions; does not respond appropriately to the audience or has some trouble answering questions.	Does not listen carefully to questions; does not provide appropriate answers or is unable to answer questions about the presentation material.