Academic Program Assessment Report for AY 2019-2020 **Program:** MSISE

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Brief statement of Program mission and goals:

I. Assessment of Student Learning Outcomes (SLOs) in this cycle. Including processes, results, and recommendations for improved student learning. Use Column H to describe improvements planned for 2019-2020 based on the assessment process.

Expected Student Learning Outcomes (SLOs)

1. Apply industrial engineering knowledge in facility design, operations planning, operations research, and simulation.
2. Apply engineering principles in the design and analysis of a system or process to meet specified needs.
3. Communicate effectively in writing and orally.

Where the SLOs are aligned with the following MSISE program's educational objectives (PEOs)

I. The MSISE program prepares students from diverse educational backgrounds to function as engineers in advanced projects in industrial engineering and operations research.

II. The MSISE program prepares students to continue their studies and obtain other advanced degrees especially at the doctoral level.

Course Name	A. Which of the program SLOs were assessed during this cycle? **Please include the outcome(s) verbatim from the assessment plan.**	B. When was this SLO last reported on prior to this cycle? (semester and year)	C. What method was used for assessing the SLO? **Please include a copy of any rubrics used in the assessment process.**	D. Who was assessed? Please fully describe the student group(s) and the number of students or artifacts involved (N).	E. What is the expected proficiency level and how many or what proportion of students should be at that level?	F. What were the results of the assessment? (Include the proportion of students meeting proficiency.)	G. What were the department's conclusions about student performance?	H. What changes/improvements to the program are planned based on this assessment?

EN 520 Simulation Experiments	1,2, and 3.	Spring 2020	See Evaluation Rubric for EN 520.	Two MSISE stuents were assessed	80% of the students earn 8 or better.	Every student earned 80% or better.	All students (100%) performed well. We conclude that the goal was met.	Students are being offered problems from real applied research existing in the most recent literature presented in the Institute of Industrial and Systems Engineering Annual Conference and Winter Simulation Conference.
EN 571 Operations Research	1,2, and 3.	Fall 2019.	See Evaluation Rubric for EN 571.	Six MSISE program students and one MBA student were assessed.	80% of the students earn 8 or better.	Every student earned 80% or better.	All students (100%) performed well. We conclude that the goal was met.	The students are being encouraged to use the most recent mathematical programming tools.
EN 575 Facilities Planning and Design	1,2, and 3.	Fall 2019	See Evaluation Rubric for EN 575.	Five MSISE students were assessed	80% of the students earn 8 or better.	Every student earned 80% or better.	All students (100%) performed well. We conclude that the goal was met.	Students are being offered problems from real applied research existing in the most recent literature presented in the Institute of Industrial and Systems Engineering Annual Conference.
EN 577 Operations Planning and Control	1,2, and 3.	Spring 2020.	See Evaluation Rubric for EN EN 577.	Five MSISE program students were assessed.	80% of the students earn 8 or better.	Every student earned 80% or better.	All students (100%) performed well. We conclude that the goal was met.	The course instructor continues to guide the students to focus on research problems related to contemporary issues.
EN 593 Graduate Seminar	3	Fall 2020	Written and oral presentations about critical review of existing	Three first year MSISE students were assessed.	80% of the students meet expectations.	The students in EN 593 wrote literature reviews and did	All students (100%) performed well. We conclude that the goal was met.	Keep on encouraging students in the EN 593 Graduate Seminar to work and use proper referencing in all their academics reports including research.

			research and potential research topics. See evaluation criteria for oral and written communication.			presentations each on a potential topic for his master thesis or research project. A 100% of the students exceeded the expectation for this SLO.		

Comments on part I:

One of the main issues found in MSISE students is their proficiency to effectively communicate both written and orally their research since most of them are international students. In order to address this issue the faculty teaching courses to the MSISE students have done special emphasis on these skills by requiring students to write a report and present the results of their research projects. The faculty have seen an improvement as indicated by the assessment above in the MSISE students. An important component of this improvement is the EN593 Graduate Seminar course where students perform and present critical reviews of existing research (a peer reviewed journal paper, a master thesis, and a doctoral dissertation in their discipline). Additioanlly, the students have to prepare and present a literature review and a proposal defense based on a potential topic for either their master thesis or research project.

Evaluation Rubric for EN 520, 571, 575 and EN 577

	Evaluation Points				
	10	9	8	7	< 6
Evaluation Criteria	Very high	High	Intermediate	Low	Very low
• Relevance of the research problem identified to the field of industrial engineering					
• The degree at which the problem defined requires extensive research, other than the course materials covered in class					
• Quality of the final research report and oral presentation					

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 time 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.

II. Closing the Loop. Describe at least one data-informed change to your curriculum during the 2019-2020 cycle. These are those that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) or other issues did you address in this cycle? **Please include the outcome(s) verbatim from the assessment plan.**	B. When was this SLO last assessed to generate the data which informed the change? Please indicate the semester and year.	C. What were the recommendations for change from the previous assessment column H and/or feedback?	D. How were the recommendations for change acted upon?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
Communicate effectively in writing and orally.	Fall 2019	Keep on stressing the use of proper referencing when writing academic reports.	Training sessions with the library on writing, proper referencing, and use of on campus databases for literature review.	3 out of the 3 MSISE students in EN 593, 2 out of the 2 MSISE students in EN 520 and 4 out 4 MSISE students in EN575 wrote their reports by following the IEEE referencing format.

Comments on part II: Most of the MSISE students with the exception of the two 3+2 students are international students who have some issues using proper referencing in their research reports. For the last 5 years the department of engineering working jointly with the library and the writing center have been providing workshops to all the master students on writing, using the academic resources and proper referencing. This 2019-2020 academic year, the MSISE students have been exceeding expactions on both written and oral expectations regarding proper referencing and proper use of the existing literature. Anecdotally, the have claimed that the sessions with the library and the writing center in addition to the guidance and feedback from the Enginnering faculty have provided them with the required skills to exceed expectations on this outcome.