ASSESSMENT of LOs through MSc THESIS and THESIS DEFENSE

Program_____

Candidate Name: _____ **Date**: _____

Title of Thesis: _____

Evaluation/Guidance	Does Not Meet Expectations	Meets Expectations	Exemplary Performance
1. **Problem Definition:** Stated the research problem clearly, providing motivation for undertaking the research. (LO1)			
2. **Literature and Previous Work:** Demonstrated sound knowledge of literature in the area, and of prior work on the specific research problem. (LO2)			
3. **Impact of Proposed Research:** Demonstrated the potential value of solution to the research problem in advancing knowledge within the area of study. (LO1)			
4. **Broader Impact:** Demonstrated awareness of broader implications (i.e. social, economic, technical, ethical, business, as well as other aspects) of the undertaken research. (LO1)			
5. **Solution Approach:** Has applied sound state-of-the-art research methods/tools to solve the defined problem and has described the methods/tools effectively. (LO2)			
6. **Results:** Analyzed and interpreted research results/data effectively, and compared the generated results with previous/competing work. (LO2)			
7. **Critical Thinking:** Has demonstrated capability for independent research in the area of study and expertise in the area. (LO1)			
8. **Quality of Communication:** Communicates research results clearly and professionally in **written** and **oral** form. (LO3) **written**			
oral			
9. **Publications:** Journal or conference publications have resulted (or are anticipated) from this research. (LO3)			

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1 through 9 above.

Criteria	Performance ratings		
	DOES NOT PASS THESIS DEFENSE EXAM	PASSES THESIS DEFENSE EXAM	
OVERALL, My rating of the thesis is:	Does Not Meet Expectations	Meets Expectations	Exemplary Performance

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____ **Date**: _____

Graduate program learning outcomes/student outcomes for the Master of Science in Engineering (thesis track)
Master of Science in Engineering with Emphasis in Civil, Environmental, or Mechanical Engineering

The Master of Science in Engineering (MSE) is a thesis-based/research focused graduate degree program. Students work closely with a faculty advisor to develop a personal research plan within their emphasis area (Civil, Environmental, or Mechanical Engineering), which allows the student to design and complete an original research study in their area of specialty. This degree program is valuable to engineers interested in pursuing professional careers in research or product innovation, doctoral studies, or academic careers.

LO1: Demonstrate the ability to apply graduate level critical thinking skills to formulate and solve advanced engineering problems in the emphasis area (Civil, Environmental, or Mechanical Engineering):
- Acquire knowledge on advanced contemporary engineering topics and computational tools specific to the emphasis area.
- Develop the ability to identify, formulate, and solve advanced engineering problems relevant to the emphasis area.
- Develop the ability to synthesize, explain, verify, and justify solutions to complex engineering problems specific to the emphasis area.

LO2: Demonstrate the ability to independently and creatively design and conduct research studies:
- Assess the state of the art in their field of study, including a thorough literature review
- Design a research study of personal or professional interest and importance including: planning, organizing, scheduling, and executing the project with the guidance and input of their thesis advisor.
- Apply independently and creatively appropriate engineering theories and tools towards finding a viable solution to the thesis topic.
- Perform and interpret complex quantitative analyses specific to the thesis.

LO3: Demonstrate the ability to communicate effectively the results of a comprehensive research study/project through oral presentations and publications:
- Create a publishable paper reflecting the integration of knowledge acquired through the thesis study.
- Evaluate the effectiveness of the project and the implications of the resulting data
- Synthesize and present the relevance of the research study in both technical and non-technical terms.
- Deliver an oral presentation to peers summarizing the work performed on the research study and its outcomes.
- Conduct a thesis defense to a community of engineering faculty and peers

Assessment

1. Master of Science thesis
2. Master of Science thesis defense