



NORTHERN ILLINOIS UNIVERSITY

# College of Engineering and Engineering Technology

*Department of Electrical Engineering*

## Academic Program Assessment Plan

July 1, 2019

**Program:** M.S. in Electrical Engineering

### 1. Student Learning Outcomes

Graduates will have the ability to:

- 1) Demonstrate the ability to formulate, analyze, and solve advanced electrical engineering problems.
- 2) Demonstrate the ability to apply advanced design processes to engineering problems.
- 3) Demonstrate the ability to conduct research and development to investigate or create new systems, components, or processes.
- 4) Demonstrate the ability to communicate effectively with those inside and outside of electrical engineering

### 2. Explanation of Methods

The following chart lists the methods used, as well as a description of each method, the timeline or implementation, the person responsible, and the objectives each method addresses. All outcomes are addressed by at least one direct method. Relevant surveys, rubrics, and evaluations are labeled and listed as Appendices.

**Table I. Assessment Chart**

Method	Direct/ Indirect	Description/Target	Timeline	Person Responsible	Objectives Addressed
Student surveys for MS thesis or MS project work	Indirect	After defending the thesis or the project, students are surveyed to assess their opinion about meeting the stated outcomes. A copy of the survey is shown in Appendix (A).	Every thesis or project defended every semester, every year.	Department chair and assessment committee are responsible for the assessment activities. Students submit their surveys to the department after finishing the defense. The chair tabulates and analyzes the survey data.	1, 2, 3, and 4.



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		<p><b>Target:</b> Average score for each outcome should be equal to or more than 3.5 out of 5.</p>			
<p>Thesis committee review of student's research</p>	<p>Direct</p>	<p>All members of the thesis committee (minimum of three) evaluate the student's research, background, and communication skills. The Chair tabulates and analyzes the data. The Evaluation sheet used is shown in Appendix (B).</p> <p><b>Target:</b> Aggregate score for each outcome should be equal to or higher than 3.5.</p>	<p>Every thesis or project defended every semester, every year.</p>	<p>Department chair and assessment committee are responsible for the assessment activities. Students submit their surveys to the department after finishing the defense. The chair tabulates and analyzes the survey data.</p>	<p>1, 2, 3, and 4.</p>



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## ***Outcomes-by Methods***

Table demonstrating which outcomes are addressed by each method of assessment

<b>Table II. Outcomes addressed by methods</b>			
<b>Learning outcome</b>	<b>Embedded questions in HW assignments and examinations</b>	<b>Student surveys for research work</b>	<b>Thesis committee review of student's research</b>
(1) Demonstrate the ability to formulate, analyze, and solve advanced electrical engineering problems.	X	X	X
(2) Demonstrate the ability to apply advanced design processes to engineering problems.	X	X	X
(3) Demonstrate the ability to conduct research and development to investigate or create new systems, components, or processes.	X	X	X
(4) Demonstrate the ability to communicate effectively with those inside and outside of electrical engineering.	X	X	X