Annual Academic Assessment Report
Department of Electrical Engineering and Computer Science
Ph.D. in Electrical Engineering
June 2024

I.   Student Learning Outcomes

The Ph.D. in Electrical Engineering student learning outcomes are identified as EE1 through EE7:

EE1. Apply knowledge of engineering, science, and mathematics to analyze and solve advanced electrical engineering problems.

EE2. Locate literature and other sources of information relevant to a specific topic, understand and evaluate it, and apply the information.

EE3. Define and conduct independent research, and to make effective use of the tools available for that research. A student should also be able to develop new tools, methods, and techniques when necessary to accomplish research objectives.

EE4. Have an in-depth knowledge of some specialty area within electrical engineering, and should have a broad knowledge of related areas in engineering, science, and mathematics.

EE5. Communicate effectively using both oral and written presentations.

EE6. Understand the need for continued learning and professional development, and should understand the need to maintain awareness of current professional issues.

EE7. Have an appreciation of the importance of professional responsibility to society in such areas as the environment, social issues, and safety, and should be committed to ethical conduct in all areas.

II.   Assessment and Evaluation: AY 2023-2024

The Department of Electrical Engineering and Computer Science (EECS) evaluated Student Learning Outcome assessments. The results of the analysis are summarized in the following:
- **Outcome EE1**:
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.
- **Outcome EE2**:
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.
- **Outcome EE3:**
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.
- **Outcome EE4:**
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.

- **Outcome EE5:**
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.
- **Outcome EE6:**
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.
- **Outcome EE7.**
  - The outcome measured in courses indicates students are achieving the Outcome at the desired target level.

III. Changes to the Degree Program- Planned or Considered

There are no changes in the Ph.D. Electrical Engineering degree program planned or considered based on the assessment and evaluation process. The program is now under a recent merger of the Department of Computer Science and Computer Engineering (CSCE) and the Department of Electrical Engineering (ELEG) into the new Department of Electrical Engineering and Computer Science (EECS) that officially began August 14, 2023. This is an organizational change and for now degree programs will not be changed. During the 2023-2024 academic year, the Ph.D. Readiness Exam was renamed as the Ph.D. Qualifying Exam in order to be consistent with the Computer Science and Computer Engineering degree programs. It is anticipated there may be program changes in the future. For example, the EECS faculty may consider graduate courses that could be shared between the Computer Engineering, Computer Science and Electrical Engineering degree programs.

IV. Changes to the Assessment Process - Planned or Considered

The Ph.D. in Electrical Engineering program outcomes are assessed using the following tools:

1. **Course Evaluation:** Evaluations of the course content pertaining to specific outcomes by students and faculty.

2. **Evaluation at Candidacy Exam (Candidacy Exam and Proposal Defense)**: The advisory committee reviews and critiques research plans of the student based on the research proposal and oral examination of the student.

3. **Final Presentation/Thesis/Dissertation Defense Evaluation:** These are assessed at the final comprehensive exam presentation or thesis/dissertation defense through a questionnaire filled out by the student's advisory/thesis/dissertation committee members and their major advisor.

4. **Exit Interview: G**raduating students complete an online survey about their experiences during their degree program.

There was an external review of the graduate program in Electrical Engineering during October 2023. The recommendations and comments from the evaluators are being assessed by the EECS Department and College of Engineering. Improvements to the Student Learning Outcomes and assessment process will be considered by the EECS faculty during the 2024-2025 academic year.