

Outcomes and Assessments for Electrical Engineering (Doctoral):

Learning Outcomes:

Electrical Engineering doctoral graduates will have demonstrated

- A depth of knowledge and an understanding of advanced topics in the discipline
- The ability to communicate technical material effectively orally
- The ability to communicate effectively through scholarly technical reports and publications
- The capability to practice the profession of engineering at an advanced level
- The ability to perform research
- The ability to apply software to problems through the creation of new applications and the use of modern software tools
- The ability to address unstructured problems and to provide innovative solutions
- The knowledge of key computer and study skills that are supportive of lifelong learning

Assessments:

- Graduate committee oversight of the examination policies and results
- Faculty program committee with oversight of program of study and oral and written examination results
- Screening exam for writing capability
- Tracking progress through program and advising based on student class performance
- Monitoring of student publications
- Monitoring of student proposal participation

Use of Assessment Findings:

- Based on screening exam for graduate student writing proficiency we have determined that remedial action was necessary to allow students to perform at a level necessary to meet our objectives. Two approaches were taken. The first was to require workshop instruction and the provision for web-based instruction targeting the most common writing errors. The second was the use of an ESL course. Follow up for students taking the ESL course has been very promising. A second screening exam was performed on the students taking the ESL course and for a control group who had not. Both had registered scores on the first exam for comparison. The ESL group scored significantly higher while the control group score actually declined.
- Evaluation by the graduate committee indicated that for the amount of research done in the department our mix of masters and doctoral students was skewed in the direction of the masters program. The faculty adopted a strategic plan to decrease the number of masters students relative to doctoral students.
- Feedback for graduate faculty led to the graduate committee imposing a more formal process of approval for directed individual study credits that require a formal proposal and set guidelines for output. The signature of the chair of the graduate committee or the department head is required for approval.