Institutional Effectiveness Report
2018-19

Program: Electrical and Computer Engineering MS

College and Department: College of Engineering – Electrical & Computer Engineering

Contact: Allen MacKenzie

Mission: Provide quality undergraduate and graduate education and perform research in the areas of electrical and computer engineering to enhance the competitiveness of our graduates and contribute to economic, scientific, and social development.

Program Goals:

1. Graduates of the M.S. program will have the technical competence to be successful in the chosen area of study in electrical and computer engineering professional practice or research.

2. Graduates of the M.S. program will have the skills to undertake technically sound analysis independently and present their work at professional meetings or publish their work in scholarly journals.

3. Graduates of the M.S. program will have the technical competence to successfully undertake further advanced study at the doctoral level in electrical and computer engineering or a related area, and pursue lifelong learning through professional education.

Student Learning Outcomes:

Students of the MS program in Electrical and Computer Engineering will be able to:

1. Demonstrate clear understanding of the chosen area of emphasis in electrical and computer engineering covered in course material in the graduate program.

2. Apply advanced methods in the development of solutions in the chosen area of emphasis in electrical and computer engineering.

3. Give professional presentations or write

Assessment Methods:

1. *Completion of Core Course and other Graduate Level Course Requirements:* Course work required for MSECE is as follows:

Thesis Track MS Program of Study

ECE 6910 Intro to Graduate Research -1 credit
Three ECE graduate breadth courses - 9 credits
Two ECE Elective courses - 6 credits
Elective courses (some may be outside ECE) - 9 credits
Two ECE 6990 Research & Thesis courses - 6 credits
Total: 31 credits

Non-Thesis Track MS Program of Study

ECE 6910 Intro to Graduate Research - 1 credit
Three ECE graduate breadth courses - 9 credits
Four ECE Elective courses - 12 credits
Elective courses (some may be outside ECE) - 9 credits
ECE 6970 - Non-Thesis Design Project – 3 credits
Total: 34 credits

Each MS student must complete three ECE graduate breadth courses from a list maintained by the ECE Department. No more than six credits (2 courses) of 5000-level courses may be used to satisfy the MS requirements. No more than six credits (2 courses) of directed study ECE 6980/7980 may be used to satisfy the MS requirements. A maximum of nine credits (3 courses) of approved graduate coursework may be transferred from another university to satisfy the MS requirements. Admission to Candidacy is achieved following the term in which a student completes 9 hours, usually at the beginning of the second semester, at the same time the Program of Study is submitted. The basic requirements for candidacy are full standing, completion of nine credit hours of graduate work, and a TTU GPA of at least 3.0.

2. *Completion of Master's Thesis or Independe*

defending a second time. The second attempt may be scheduled as soon as these deficiencies are rectified. However, failure on the second attempt results in dismissal from the graduate program.

For the non-thesis option, there is a 3 credit hour semester-long Non-Thesis Design Project course (ECE 6970) to address the University and program requirement that students be able to demonstrate the ability to engage in independent learning and discovery. In addition to the independent project, the MSECE non-thesis option requires a final Comprehensive Exam. The Comprehensive Examination is a four-hour written examination taken during the semester of graduation, consisting of two questions from each of three ECE graduate breadth courses chosen by the student. These questions are prepared and graded by the professor responsible for that core course. The Department Chair is responsible for assembling, proctoring, and compiling the overall score on the exam. An overall score of 70 percent is required to pass. A committee signature form is then forwarded to the office of Graduate Studies that shows the result of the examination. If the student fails this exam, he or she will be given a written list of specific deficiencies that must be addressed prior to a second exam attempt. That second attempt may be scheduled as soon as the deficiencies are rectified. However, failure on the second attempt results in dismissal from the MS program.

3. *ECE Depar*

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Modifications for Improvement:

A requirement that all MS students either present a paper at a conference or participate in TTU Research Day was added to the graduation requirements in the 2015-2016 academic year. We are seeing an increased number of student publications/presentations as a result.

Appendices

1. Curriculum Map – Thesis Option
2. Curriculum Map – Non-Thesis Option

Appendix 1: Curriculum Map – Thesis Option

ECE M.S. (Thesis): Curriculum Map	
	Student Outcomes
Requirement	

Appendix 2: Curriculum Map

ECE M.S. (Non-Thesis): Curriculum Map	
	Student Outcomes
Requirement	