

# Degree Requirements, Electrical and Computer Engineering

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Graduate handbook information is updated and maintained by each program. Graduate handbooks are available within each program's office and online at <https://utexas.box.com/v/UTAustinGraduateHandbooks>. Please contact the program with concerns or questions.

## Overview

Applications may be made to one of the Master of Science in Engineering (MSE) programs in ECE to pursue the MSE degree or may be made to the Doctor of Philosophy (PhD) program in ECE to pursue the PhD. A master's degree is not required to obtain the PhD, but a student entering the PhD program without a master's degree in the same or a related field typically can choose to also pursue the MSE along the way. Similarly, a student in one of the MSE programs can be admitted to the PhD program for continuing study. In either case, the student often can earn both degrees with little or no additional effort beyond that required to earn only the PhD by using much or all the same classroom-instruction-based ("classroom") coursework for both degrees.

Beyond a minimum of six hours of Dissertation courses required for the PhD and normally taken on a credit/no credit basis in ECE, both the MSE and the PhD Programs of Work require 30 semester hours (10 three-hour semester-long courses) of coursework including at least 18 hours of major work and at least six hours of supporting work. Both the MSE and the PhD Program of Work can include up to two upper-division undergraduate courses (three hours or more each) where available, but supporting work must include at least one graduate course (three hours). Which courses may be counted as major work and which may be counted as supporting work depend on both the student's academic track and the student's individual interests. Ultimately, all major and supporting coursework must be logically related. Individual academic tracks may have additional requirements. The academic track advisor, the student's individual supervisor if any, or both can provide guidance as to which courses a student may count toward major or supporting work. Additional courses may be taken outside the Program of Work, such as courses taken for remedial purposes and, usually on a credit/no credit basis, Research Problems and additional Dissertation courses. The Graduate School of the University of Texas requires graduate students to maintain an overall GPA of at least 3.00 (B) for all coursework taken while within the graduate program and to achieve a 3.00 GPA for all coursework taken within the graduate program that is included within an MSE or PhD Program of Work. Program-specific information and additional requirements for each graduate program within ECE are provided in what follows. Still more information is available online, from a graduate coordinator within the ECE Advising Office, from the academic track advisors, and from other sources noted in what follows.

## Master of Science in Engineering

The Chandra Department of Electrical and Computer Engineering currently offers three Master of Science in Engineering (MSE) programs to meet differing needs: the Traditional MSE program, the Integrated BSECE/MSE program, and the single-track Alternatively Scheduled MSE program with a concentration in Software Engineering. The latter program is offered through Texas Engineering Executive Education (TxEEE). The Traditional and Integrated BSECE/MSE programs share the same academic track advisors; the Alternatively Scheduled MSE

program has its own program advisor. Students in each of these MSE programs are expected to meet the same academic standards.

The Traditional and Integrated MSE programs each offer thesis, report, and coursework-only options; the Alternatively Scheduled MSE programs each offer thesis, report, and coursework-only options; the Alternatively Scheduled MSE program offers only the report and coursework-only options. The thesis option requires original research and satisfactory completion of a written thesis and two associated three-hour *Thesis* courses taken on the credit/no credit basis within the 30-hour MSE Program of Work. The report option requires satisfactory completion of a written report and one associated three-hour *Report* course taken on the credit/no credit basis within the 30-hour MSE Program of Work. Otherwise, all other courses that count toward the MSE Program of Work must be classroom courses and taken for a letter grade. Up to six semester hours (two semester-long courses) or the quarter system equivalent of graduate coursework taken elsewhere but not used for a prior degree may be used for the Program of Work with approval. A minimum grade point average of 3.00 (B) is required within the MSE Program of Work for coursework taken at The University of Texas at Austin as a Graduate student. The MSE Program of Work including graduate coursework taken at other institutions and taken at The University of Texas at Austin as an undergraduate and reserved for graduate credit should meet this standard also. Moreover, only one course with a grade less than B-, no course with a grade less than C, and no course with a grade of less than B taken at another institution may be counted within the MSE Program of Work. The student's MSE Program of Work must be approved by the student's academic track advisor or, in the case of the Alternatively Scheduled program, program advisor or by the student's individual supervisor, then by the graduate advisor of the Chandra Department of ECE, and finally by the Graduate School of The University of Texas at Austin.

**Traditional MSE program:** Students in the Traditional MSE program attend classes with students in the Integrated MSE program and the PhD program and have access to upper-division undergraduate courses and courses taught outside the Chandra Department of ECE.

**Integrated BSECE/MSE program:** Admission to the Integrated BSECE/MSE program is open only to students within the undergraduate program within the Chandra Department of Electrical and Computer Engineering at The University of Texas at Austin. The Integrated BSECE/MSE program is designed to provide a smooth and accelerated connection between the Bachelor of Science in Electrical and Computer Engineering (BSECE) degree and the MSE degree and it results in the simultaneous awarding of both degrees. However, the course options and requirements of the MSE portion of the Integrated BSECE/MSE program are identical to those of the Traditional MSE program, and students in the Integrated BSECE/MSE program attend classes with those in the Traditional MSE program and the PhD program and have access to upper-division undergraduate courses and courses taught outside the Chandra Department of ECE. Admission requirements and procedures for the graduate portion of the Integrated BSECE/MSE program also are much the same as for the Traditional MSE program, except that students are expected to have taken and reserved for graduate credit two graduate courses prior to entering the graduate portion of the Integrated BSECE/MSE program. Information about the requirements of the undergraduate portion of the Integrated BSECE/MSE program is available from the [Integrated BSECE/MSE program](#) sub-section of the Bachelor of Science in Electrical Engineering section of the Undergraduate Catalog, from the [ECE website](#), and from an undergraduate advisor within the ECE Advising Office.

**Alternatively Scheduled MSE program with a concentration in Software Engineering:** This is a single-track program administered by Texas Engineering Executive Education (TxEEE) and designed with full-time engineers and computer professionals in mind. Students attend classes

in person taught by faculty from the Chandra Department of Electrical and Computer Engineering. However, they do so once a month on Fridays and Saturdays. Moreover, all courses offered in this program are at the graduate level, and this program has its own academic advisor. Additional information about this program is published by [TxEEE](#).

## Doctor of Philosophy

Of the 30 hours of classroom coursework required for the PhD Program of Work, up to 18 semester hours (six semester-long courses) or the quarter-system equivalent of graduate-level classroom coursework taken elsewhere but not used for a prior bachelor or doctoral degree may be used with approval. A minimum grade point average of 3.33 (B+) is required for the classroom coursework taken at The University of Texas at Austin included within the Program of Work. The Program of Work including graduate coursework taken at other institutions also should meet this standard. Moreover, no course with a grade of less than a B- and no course with a grade of less than a B taken at another institution may be counted within the ECE PhD Program of Work. The student's PhD Program of Work must be approved by the student's dissertation supervisor or supervisors, by the remainder of the student's dissertation committee (see below), by the Chair of the ECE GSC, and by the Graduate School of The University of Texas at Austin. Students in the PhD program attend classes with students in the Traditional and Integrated MSE programs and have access to upper-division undergraduate courses and courses taught outside the Chandra Department of ECE.

Beyond the requirements of a master's degree (whether or not the student has or obtains one), the PhD becomes primarily or entirely a research-based degree requiring the student to make a significant original contribution. For students who entered or enter the PhD program fall 2018 or later or who entered earlier but chose to follow the rules that are mandatory for students entering fall 2018 or later, research milestones toward the PhD include: finding a dissertation supervisor or supervisors; forming a dissertation committee consisting of the dissertation supervisor or supervisors and of other members inside and outside of the ECE GSC, undergoing a Candidacy Evaluation by the nonsupervisory members of the dissertation committee, and being admitted to PhD candidacy by the Graduate School of The University of Texas at Austin; passing a Progress Review; and ultimately writing and successfully defending their PhD dissertation before their dissertation committee. For students who entered the PhD program prior to fall 2018 and chose to be grandfathered into the rules in effect at that time, research milestones toward the PhD include: finding a research supervisor or supervisors; performing any prequalifying examination or procedure as defined by the student's academic track; forming a qualifying committee consisting of the dissertation supervisor or supervisors and of other members inside and outside of the ECE GSC, successfully performing a qualifying examination before their qualifying committee, forming a dissertation committee (probably but not necessarily the same as their qualifying committee), and being admitted to PhD candidacy by the Graduate School of The University of Texas at Austin; and ultimately writing and successfully defending their PhD dissertation before their dissertation committee. PhD students also take accompanying individual instruction *Research Problems* and/or additional *Dissertation* courses (beyond the six hours required within the PhD Program of Work) before and after entering candidacy, respectively, as required to meet registration and often employment and visa requirements. These matters are discussed in detail in the *Rules, Procedures and Expectations Regarding Academic Progress within the ECE PhD Program* which can be found on the [ECE website](#).