

Systems Science & Mathematics, PhD (ESE)

Mentored Experience Implementation Plan

As part of their degree requirements, PhD students must complete a program-defined Mentored Experience Requirement (MER) as per these guidelines. The Mentored Experience Implementation Plan (MEIP) is the written articulation of a program-defined degree requirement for PhD students to engage in mentored teaching activities and/or mentored professional activities, collectively referred to as *MERs*.

Mentored Experience Requirements (MERs)

Philosophy of Teaching

Electrical & Systems Engineering (ESE) comprises a wide range of intellectual topics ranging from quantum and device physics to systems modeling and analysis. Courses in electrical and systems engineering cover this range of topics. The students in the PhD programs in electrical engineering and systems science and mathematics may pursue teaching opportunities in any subarea. By participating in teaching underlying principles or system integration, the students must learn the related material in more depth than previously required. The process of communicating these ideas to others is a fundamental skill in any professional setting.

Preparatory Engagement

Preparatory Engagement activities are those that represent an introduction to the foundational skills associated with teaching or communication. Pedagogical preparation engagement activities are normally completed before students are permitted to engage in assisting or teaching in a classroom.

Preparatory Engagement experiences are required:

- McKelvey MTE Preparatory Trainings

Note: Students whose native language is not English must take an English communication assessment from the Engineering Communication Center and complete any recommended additional training.

Mentored Teaching Experiences (MTEs)

Assistant in Instruction (AI)

An Assistant in Instruction (AI) is a PhD student who is directly engaged in the organization, instruction, and/or support of a semester-long course *primarily taught by a faculty member*. An AI receives mentorship from a faculty member related to best practices in classroom engagement, instruction in the field, interpersonal engagement, and other relevant skills. Students and mentors complete a mentorship plan prior to the start of each AI experience. To complete each AI assignment and to ensure that it applies toward their degree requirements, students must register for the appropriate course number for each semester of engagement. Refer to the "Required Pathways for Completion" section below for course numbers and details.

ESE requires two AI assignments for a total of 10 MER units. Students work with their graduate supervisors on the timing and content of those assignments.

Required Pathways for Completion

Students work with their faculty mentor and their Director of Graduate Studies to plan how and when they will complete their MERs. Students register during the normal registration period for courses in accordance with one of these approved pathways.

- Preparatory Engagement

EGS 8010	Take two times
----------	----------------