

## [Emphasis - EE \(Electromagnetics\)](#)

- [Ph.D. in Engineering Science](#)
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### **Ph.D. in Engineering Science** **Description**

The Ph.D. in engineering science is offered in a number of emphasis areas: aeroacoustics, chemical engineering, civil engineering, computational hydroscience, computer engineering, computer science, electrical engineering, electromagnetics, environmental engineering, geology, geological engineering, hydrology, mechanical engineering, and material science and engineering.

#### **Minimum Total Credit Hours: 54** **Course Requirements**

A student must complete the requirements for one of the emphasis areas. All doctoral programs require completion of a comprehensive examination, dissertation prospectus, and a dissertation. See the department chair or adviser for specific requirements for an emphasis area.

### **Emphasis - EE (Electromagnetics)** **Description**

A Ph.D. in engineering science with emphasis in electromagnetics prepares a student with advanced technical knowledge and communication skills for pursuing a career in industry, engineering research and development, or public/government service. Students entering the program come from a variety of engineering and nonengineering disciplines such as physics and mathematics.

#### **Course Requirements**

The Ph.D. with an emphasis in electromagnetics requires 36 semester hours in the major field out of a required total of 48 semester hours of graded course work beyond the bachelor's degree. Included in these requirements are the following core courses: Advanced Electrodynamics (Engr 721); Numerical Methods in Electromagnetics (Engr 626); Passive Microwave Circuits (Engr 723); and Seminar (Engr 695, two semester hours). Other courses are to be taken in specific areas of electromagnetics, including microwave circuits, antennas, electromagnetics, and computational electromagnetics. These related courses include Engr 590, Engr 593, Engr 622, Engr 624, Engr 627, Engr 655, Engr 687, Engr 691, Engr 693 (no more than 2 semester hours), Engr 699, Engr 719, Engr 725, Engr 728, Engr 729, or other courses with approval. The candidate must take 12 semester hours of graded courses in a minor area (mathematics, physics, or another appropriate field with approval).

#### **Other Academic Requirements**

A written comprehensive exam is taken during the first year of residency.

