

The information in this document replaces the corresponding information in the Graduate Handbook.

Ph.D. in the ECE Department

During the first year of doctoral study, students should seek an academic faculty advisor in their area of concentration to advise on their program of study, including course registration and preparation for the qualifying examination. Students should also speak to area faculty to choose a research advisor and the research topic they will begin after passing the qualifying examination. The academic advisor and the research advisor could be the same person. Students can always visit the Doctoral Program Coordinator (Associate Chair for Graduate Studies) to discuss any issues regarding their program.

1. Degree Requirements

Requirements are determined in consultation with department advisors. Students holding a master's degree will require a minimum of 60 graduate credits beyond the master's degree. In addition to overall credit requirements, the program includes the following requirements.

- 24 credits of course work beyond the master's degree (excluding department core courses and other basic area courses)
- at least 12 credits of course work must be at the 700 level
- 500 level. ECE department core courses, ECE 601, ECE 620, ECE 673, and ECE 684, cannot be used to satisfy the 24-credit course requirement.
- In addition, the entry-level courses in the student's major area cannot be used to satisfy the 24-credit course requirement.

The entry-level courses for each area are as follows:

- Communications and Signal Processing: ECE 640 and ECE 642
 - Computer Architecture and Systems: None (only dept. core courses are not allowed);
 - Computer Networking: ECE 683;
 - Intelligent Systems: ECE 660;
 - Solid State, VLSI and Electro-Optics Systems: ECE 657.
- No more than two independent study courses may be used to satisfy this requirement.
 - 36 credits of doctoral dissertation research. With department approval, well-qualified students may register for up to a maximum of 9 credits of ECE 792 Pre-Doctoral Research before completing the qualifying

examination. A maximum of 6 credits of ECE 792 may be applied toward ECE 790.

- All doctoral students must register for six semesters of ECE 791 Graduate Seminar. In order to receive passing credit, the student must attend at least five (5) seminars per semester, to be chosen from those sponsored by the areas, the ECE department, the Institute, or other outside seminars approved by the Seminar Supervisor. Please watch the bulletin board labeled *ECE 791 Graduate Seminar*, located in the hall leading to the ECE main office, for information on approved seminars.
- Students who wish to change majors may do so only once. If students receiving ECE department financial support wish to change majors, their applications for financial aid will be re-evaluated, at the time of switching, as if they were new applicants.

2. Qualifying Examination

Full-time students must take the qualifying exam for the first time within one year of beginning active study and must pass it completely by the next time it is offered. Part-time students must take the qualifying exam for the first time within three years of the beginning of active study and must pass it completely by the next time it is offered. For students admitted into the Ph.D. program at the B.S. level, the qualifying examination must be taken within one and one half years of admission and must be passed within two years. Students are only permitted to take the examination twice. The passage of the qualifying examinations is reported to the Office of Graduate Studies.

The doctoral qualifying examination currently consists of two portions.

- The **major examination** is taken by the student on a single day and covers predefined subjects in the student's major area of study.
- The **minor area requirement** is satisfied when the student has received grades of B or better in two predefined courses for the chosen minor area.

(Please, see the Qualifying Examination brochure for more information.)