

# ECE PhD Program Orientation

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# Outline

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## Focus of ECE PhD Program

The ECE PhD program prepares students to do original research on ECE topics and to become technical leaders in the field.

The focus of all doctoral programs is on **research**, not courses.

Research results are conveyed through conference papers and journal articles. You should be publishing papers as you go through the program, rather than just at the end.

# Overview of Program Requirements

## Typical Course Requirements:

- For students entering with MS degree: 18 credits of regular coursework plus 24 credits of dissertation research
- For students entering with BS degree: 48 credits of regular coursework plus 24 credits of dissertation research

## Qualifying Exams

- Technical Qualifying Exam  
Written exam that tests knowledge of fundamental concepts in a particular technical area.
- Research Qualifying Exam  
Short research project that assesses fundamental research skills.

## Teaching Requirement

Satisfy by working as a recitation instructor for one semester or presenting several lectures within a course.

## Overview of Program Requirements . . . continued

### **Research Competency Exam/Proposal (ECE 998)**

Presentation of your proposal followed by an oral exam administered by the dissertation committee.

### **Seminar Requirement**

You must present at least one ECE departmental seminar on the topic of your research.

### **Dissertation and Defense (ECE 999)**

The dissertation must represent a significant contribution to its field and must be deemed publishable in refereed journals or at highly-selective conferences. Oral defense is open to the public.

**You should be presenting at conferences and publishing papers throughout your degree program.**

## Technical Qualifying Exam (TQE)

- TQE is a written exam testing knowledge of fundamental concepts in one of three topic areas:

Topic 1: Signals and Systems

Topic 2: Digital Design and Computer Organization

Topic 3: Electronics and Circuits

See webpage for specific list of material covered.

- Students must pass the TQE during their first year in the program. You may take the TQE up to two times.
- TQE is offered twice per year: January and June
- Next TQE is in January 2016 – **register for this one**
- Registration for January TQE is due by October 15, 2015

## Research Qualifying Exam (RQE)

The purpose of the RQE is to assess whether students can define a research problem, critically review the literature related to the problem, apply appropriate research methods, and interpret and communicate their results.

- Topic is defined by faculty advisor in consultation with the student.
- Goal: get students working on research as soon as possible
  - Students who enter with MS degree must take RQE prior to completing 12 credits
  - Students who enter with BS degree must take RQE prior to completing 30 credits

# Things to Do

## Fall 2015

- Meet with your advisor if you haven't already done so
- Register for Technical Qualifying Exam (TQE) by October 15, 2015
  - email your selected topic area to [kwage@gmu.edu](mailto:kwage@gmu.edu)
- If you already have an MS degree, file a reduction of credit form to receive credit for your prior master's degree (see Jammie Chang for info)

## Spring 2016

- Take TQE in January 2016
- Prepare a plan of study
- If you already have an MS degree, take RQE in spring 2016



## Where to find information

### Websites about the ECE PhD program:

- ECE Department website:

[https://ece.gmu.edu/graduate-studies/  
phd-programs/ece-phd-program](https://ece.gmu.edu/graduate-studies/phd-programs/ece-phd-program)

- Mason Catalog:

<http://catalog.gmu.edu>

### People who can answer your questions:

- Your advisor
- Ms. Jammie Chang, Academic Program Manager, ECE Department: [jchangn@gmu.edu](mailto:jchangn@gmu.edu)
- Prof. Kathleen Wage, Chair of ECE PhD Program Committee: [kwage@gmu.edu](mailto:kwage@gmu.edu)

## Other useful resources

Grad Student Welcome Days offer lots of events from now through October:

- <http://gradlife.gmu.edu/gradwelcomedays>

Gradstravaganza (Sept. 4) includes mini-workshops on time management, writing, and networking along with a picnic:

- <http://gradlife.gmu.edu/gradstravaganza>

The GMU Writing Center can provide help with writing papers, proposals, theses:

- [http://writingcenter.gmu.edu/  
for-graduate-students](http://writingcenter.gmu.edu/for-graduate-students)