

ECE PhD Qualifying Exam (New Format QE) Procedure and Guidelines

Overview: The exam consists of two portions: a written report and an oral presentation with Q&A. Each portion will be evaluated separately. Passing the qualifying exam requires a pass on both portions and any failed sections must be retaken the following semester. No more than two attempts are allowed for each portion of the exam.

Purpose: Assess the student's potential to succeed in the PhD program by having them demonstrate the following:

- Reading and deeply understanding papers in the field
- Analyzing the state of the field in a particular problem space
- Understanding the strengths and shortcomings of existing work in that space
- Understanding why a particular problem space is important/how it fits into the field more broadly
- Writing and presenting information supporting the points above

Timing: Ideally, the qualifying exam should be taken by the end of the second semester of the first year. However, if necessary, the qualifying exam may be taken during the summer following the first year. *(For the 2018-2019 academic year, any student that has not yet passed the QE may choose either this New Format QE or the Old Format QE, regardless of their time in the program.)*

Committee: Three ECE faculty members generally in the student's area of research. The majority of faculty on the committee should be primary faculty members in the ECE Department. The faculty advisor may not serve on the committee.

Format: The exam consists of two parts, a written report and an oral presentation. The student works with their advisor to choose a topic, along with three key papers from their research field. A written report (10 pages maximum) is generated by the student, which consists of a review of the three approved papers in the problem space plus a brief synopsis of suggested future research/directions/projects based on what they learned. The formatting of the report should be consistent with that acceptable for professional submission. While the advisor and student choose the papers to be analyzed, the papers must be unanimously approved by the committee. Approval is obtained by the student submitting the [QE Exam Details Form](#), reviewed and approved by the advisor, to the ECE Graduate Office at least six weeks prior to the intended exam date. Within one week of submission, the Graduate Office will request paper approval from the committee; the committee has one week to approve the papers, or it is assumed that they are approved. The Graduate Office will notify the student when the papers are approved, within two weeks of submission. The oral exam cannot be taken sooner than 30 days after approval was received. Note: Excessive repetition of papers in a group is not allowed and the ECE Graduate Office will maintain a database of papers used. Of the three papers submitted for approval, no more than one may have been used in a qualifying exam affiliated with that research group in the previous three years. The written report must be provided to the committee two weeks prior to the exam date, during which time they will score/evaluate the report. At the oral exam, the student will give an ~ 30-minute presentation (30

slides maximum) about the material in their report, followed by an ~ 30 minute Q&A. If desired by the student, the oral exam (presentation + Q&A) can be video recorded and made available for review by the student and their advisor. Request for video recording is made by the student to the graduate studies office on the [QE Exam Details Form](#).

Evaluation:

Each portion of the exam (written and oral) is scored as +1 satisfactory, 0 marginal, or -1 unsatisfactory by each committee member. The sum of committee members' scores must be positive (i.e., > 0) in order for the student to pass. Each portion (written and oral) is scored, summed, and passed/failed independently.

Score:	Implies:
1	The student has successfully shown readiness for the PhD by demonstrating all elements of the qualifying exam assessment criteria.
0	The student has met some of the criteria for success, but requires improvement in some areas.
-1	The student has not met the requirements indicating readiness for the PhD.

- Committee members must submit their score for the written report to the ECE Graduate Office prior to the oral presentation.
- Committee members must submit their score for the oral portion of the exam to the ECE Graduate Office within 24 hours of the presentation.
- The sum of the committee members scores for each part of the exam are sent to the student and faculty advisor within three business days after the exam. When applicable, the video recording of the oral presentation and Q&A is also made available.
- The advisor can submit a written petition to the DGS requesting reconsideration of the exam outcome within two weeks of the exam date. Students who do not pass one or both portions of the exam are encouraged to discuss the result with their advisor and/or the DGS.
- If the student fails either portion, the student may re-take the exam once during the semester following the exam.

Exam preparation assistance:

- The student may send any question they want to the committee.
- The student may seek help with organization/outline of their document from their advisor; they may seek help from the Writing Center on editing/organization/outline. Otherwise, their writing must be their own.
- After the written document is submitted, the student may give practice talks to anyone they want. They may receive feedback on these talks (including advisor feedback) but must incorporate it independently (e.g., people can suggest changes to slides, etc. but the student must execute them on their own).