

The ECE Qualifying Exam

Graduate Committee

ILLINOIS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Role of the Exam in Ph.D. Program

- Admission to Ph.D. candidacy is based on a **faculty vote** at a meeting held at end of the semester
 - This vote decides whether the student is allowed to continue as a Ph.D. student
 - Faculty vote is “pass” or “fail”
- Faculty vote is based on three criteria:
 - Graduate course work → grades and class rank
 - Qualifying Oral Exam → committee of three faculty
 - Research → support of thesis adviser
- Must be TA eligible to be admitted to PhD candidacy

Qualifying Exam Purpose

- To provide an independent assessment of student's
 - potential to perform research
 - fundamental knowledge in primary/secondary areas
- During the **Oral Exam**, Students are evaluated on:
 - their ability to describe research motivation, background & context
 - background knowledge from course work
 - ability to understand and answer questions (oral skills)
 - ability to express ideas in a written format (written skills)
- Research contributions or results are not required, but may be included

Oral Exam Structure

- **Written Report:**
 - 5 pages maximum length
 - Needs to emphasize background, motivation, rationale, and scope of the research area you choose
 - Needs to be written for a broad audience (do not write for experts in the field)
 - Research contributions or results are not required but may be included
 - Student should be the sole author of the report, use your own words! (do not copy text from published sources, plagiarism will be checked)
- **Oral Exam:**
 - 2 hours should be scheduled for room, 90 minutes should typically suffice
 - Approximately 12 slides/20-minute presentation if uninterrupted
 - Needs to emphasize background, motivation, rationale, and scope of the research area you choose
 - Research contributions or results are not required but may be included
 - Needs to be presented for a broad audience
 - Expect questions on area of research
 - Expect questions on background topics related to research

Consensus Evaluation Form (1)

Student:	Diana Smith
Advisor:	Indiana Jones
Evaluator:	Consensus
Primary Area:	Hardware systems
Secondary Area:	Electronic Design Automation

Exam Date:	11/13/2020 1:00:00 PM
Exam Location:	Zoom
Eval Updated:	

[Links to all finalized evaluations](#)

The text area fields below allow the entry of a max of 4000 characters each, 8000 characters combined.

Please rate the student in each of the areas below using the scale:

E = Excellent VG = Very Good G = Good NI = Needs Improvement U = Unacceptable

Knowledge of the topic of presentation

E E/VG VG VG/G G G/NI NI NI/U U

In the box below, provide detailed comments on the student's ability to answer questions on the topic of the presentation. In particular, please provide examples of the questions asked and the student's responses. While evaluating the student, please remember that the student has not even entered the PhD program and thus, cannot be expected to be at the same level as a student taking the prelim exam.

Consensus Evaluation Form (2)

Knowledge of areas closely related to the primary area of interest

E E/VG VG VG/G G G/NI NI NI/U U

In the box below, provide detailed comments on the student's ability to answer questions on topics in their primary area and other closely related areas. Again, please provide examples of the questions asked and the student's responses.

Oral communication

Excellent Satisfactory Unsatisfactory

Written communication

Excellent Satisfactory Unsatisfactory

Suggestions for improving oral and written communication skills

Binding Requirements from the Exam Committee - Please leave this item blank if there are no binding requirements

[Click here if there are binding requirements](#)

Exam Preparation

- Based on the information you provide:
 - committee is assigned
 - questions from primary/related areas will be asked by your committee
- Review relevant course work:
 - fundamentals of primary/related areas will be probed
 - questions from undergraduate & graduate courses will be asked to test your grasp of fundamentals during exam (more info on the next slide)
- Write a report:
 - committee is interested in the “why” more than the “what”
 - background, motivation, and research context is most important
 - no plagiarism, including self-plagiarism
- Give a presentation:
 - practice your presentation before a live audience
 - seek clarification if question asked during exam is not clear
 - do not answer the wrong question
 - answer the question in a clear and precise way
 - demonstrate your ability to think critically and “on your feet”

Fundamental Knowledge Requirements for the ECE PhD Qualifying Exam

- To guide the assessment of the ECE PhD fundamental knowledge, a list of research areas in our department is available at:
 - https://my.ece.illinois.edu/qual/faculty/fundamental_knowledge.asp
- Each area has a list of core courses that a PhD student in that area should know and be tested by the time he/she takes the PhD Qualifying Exam.
- When signing up for the PhD Qualifying Exam, the student must specify a Primary area and a Secondary area, and three courses to define their fundamental knowledge, such that there is:
 - at least two from the primary area,
 - at least one from the secondary area,
 - at least one 500-level course.

Sequence of Events

- ✓ **Sign-Up:** during the first two weeks of the semester.
 - Entry with B.S. degree: no later than the fourth semester;
 - Entry with M.S. degree: no later than the third semester;
 - Ph.D. Thesis Advisor Agreement must be on file.
- ✓ **Committee Assignment:** soon after sign-up deadline
- ✓ **Scheduling:** student must contact the examination committee members to schedule a mutually convenient 90-120 minute slot for the exam by deadline
 - check committee members' general availability (teaching, travel, etc.)
 - use a poll with as many slots as possible: 9:00-11:00, 9:30-11:30, 4:00-6:00, etc.
- ✓ **Exam Topic:** should be related to the student's research. Need not be completed research work. Examples: your M.S. thesis research, an on-going research project, or a summary of important papers in a research area.
- ✓ **Report:** upload a written report no later than one week prior to examination date.
 - **reports are checked for plagiarism including self plagiarism.**
- ✓ **Examination:** student should not provide any food or drink.
- ✓ **Consensus Evaluation:** provided to student usually a few days after the exam
- ✓ **Faculty Meeting:** faculty meets at the end of the semester and votes to determine which students are to be admitted into Ph.D. candidacy