

Software Engineering (SE) PhD Qualification Process

There are two components of the SE qualification exam. Part 1 evaluates the student's academic preparedness to pursue the degree, and Part 2 evaluates the student's selected direction of research. Once the student has completed both parts of the qualification process, the student is considered a PhD candidate, progressing towards the culminating dissertation defense. Each student has two opportunities to complete each step of the qualification process.

PhD Qualification Process Step 1: Pre-qualification

The goal of the pre-qualification process is to determine if the student has demonstrated the necessary academic preparation to pursue a PhD.

Prerequisites

Before applying for the SE pre-qualification process, a student must:

- be enrolled in the SE graduate track
- have taken or are in the process of taking 5 ECE courses from 5 different faculty, 3 of whom should be core SE faculty (see below). (A student entering with a MS degree from outside UT-Austin must take 3 courses from 3 different faculty, 2 of whom should be core SE faculty.)
- have completed an individual oral interview with 3 core SE faculty of the student's choosing. The format and length of the interview is left to the discretion of the faculty member; when the student arranges the interview, the faculty member may give the student material to review or hints about the format of the interview. It is the onus of the applicant to schedule these interviews and to allow enough time before the application deadline to complete the interviews. Concerns regarding difficulty scheduling the interviews should be directed to the SE Area Graduate Advisor.

Application Process

Each student must fill out the *SE PhD Pre-Qualification Form*. This form requires:

- a list of courses taken and/or in progress and the student's grades for the completed courses. The applicant must list *all* courses taken at UT-Austin.
- the signatures of the 3 core SE faculty who interviewed the applicant. A signature does not indicate any judgment of the quality of the student's performance in the interview but signify simply that the interview took place.
- the signature of the applicant's intended advisor signifying the advisor's willing to supervise the applicant's PhD research.

Review Process

Pre-qualification applications will be reviewed twice a year; approximately in November and April. Applicants whose forms are received prior to November 1 and April 1 are guaranteed consideration in the same semester.

The core SE faculty will meet jointly once a semester to evaluate the pre-qualification applicants for that semester. This comprehensive review will include evaluation of the coursework, the interviews, a statement by the student's advisor, and an open discussion of each applicant. Given this review, the SE faculty votes on each applicant, with a simple majority rules result.

A student who passes Step 1 can continue to Step 2 of the SE PhD qualification process. A student that does not pass Step 1 on the first try can reapply in a subsequent semester. A student can apply to the SE PhD prequalification process no more than two times. A student who does not pass on the first attempt should

meet with both his/her advisor and the SE Area Graduate Advisor for constructive feedback on the unsuccessful application.

PhD Qualification Process Step 2: Qualifying Exam

Only students that have successfully completed Step 1 can move onto Step 2. In this step, a student forms a qualifying exam committee, constructs a proposal for the dissertation research, and presents and defends that proposal for the committee.

Forming the Qualifying Exam Committee

In concert with the student's advisor, the student should form a committee to conduct the qualifying exam. This committee must contain:

- at least 5 members.
- the student's advisor.
- at least one additional member selected from the core SE faculty.
- a member who has agreed to serve as the chair of the qualifying exam committee (and is not the student's supervisor).
- at least 3 members who are also members of the ECE graduate studies committee.
- at least 1 member who is NOT a member of the ECE graduate studies committee.

The committee can also contain additional members, e.g., from industry or other institutions.

When the committee has been formed, the student should send the SE Area Graduate Advisor the following:

- the members of the committee and their affiliation, identifying the supervisor, the committee's chairperson, and the external member. For any committee member not a member of the GSC, a curriculum vita must be included.
- the title of the proposed research.
- the date and time of the scheduled exam.

This information should be sent to the graduate advisor at least 3 weeks prior to the scheduled exam to enable enough time to circulate the committee for approval.

Format of the Exam

At least 2 weeks prior to the scheduled exam, the student should submit the written proposal to each of the committee members. The proposal should concisely delineate the student's intended dissertation research. It should also contain a listing of the student's completed courses and achieved grades. The student is responsible for reserving space for the exam and is advised to remind the committee of the exam location and time the day before. The student should bring the required paperwork to the exam. The exam itself consists of two portions: the public portion that should be advertised and can be attended by anyone, and the private portion that is restricted to the committee. The public portion includes an approximately 45 minute presentation by the student and questions from the public; the private portion includes questions only from the committee.

At the conclusion of the private portion of the exam, the committee discusses the student's presentation and determines whether or not the student passes. If the student passes, he/she is now considered a candidate for the PhD in the SE area. A student who does not pass can attempt Step 2 of the qualifying exam a second time. A student is given at most two opportunities to pass Step 2 of the qualifying exam.

PhD Qualification: Yearly Reviews

All SE PhD graduate students who have successfully passed at least Step 1 of the qualification process will be required to undergo a yearly review. Before April 1 of each year, each student will submit a *SE PhD Yearly Review* form to the SE Area Graduate Advisor. At the spring SE qualification meeting, each candidate will be reviewed and discussed by the entire SE area faculty.

Supplementary Information (Fall 2008)

The following supplementary information is current as of Fall 2008.

This new policy is effective for students admitted to the graduate school in the SE area in Fall 2008 and beyond. Students admitted prior to Fall 2008 can opt to use this qualification procedure (both steps 1 and 2) OR the computer engineering graduate area policy in place when they were admitted (see the information at <http://users.ece.utexas.edu/~ljohn/phd-guidelines.htm>).

Core SE faculty:

- Suzanne Barber
- Vijay Garg
- Christine Julien
- Sarfraz Khurshid
- Miryung Kim
- Scott Nettles
- Dewayne Perry

SE Area Graduate Advisor: Dewayne Perry