NEW EE PHD QUALIFYING EXAMINATION FORMAT
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Approved: 02/03/2015

Statement of Purpose. The purpose of the PhD qualifying examination is to test the student’s preparedness to undertake a program of original and creative research. It is not an evaluation of the student’s preliminary research or research results. There are two components, a written exam and an oral exam. The purpose of the written exam is to test the student’s fundamental knowledge in his or her discipline and likely area of research. The purpose of the oral exam is to test the student’s ability to read and understand the current literature in the field, to demonstrate a creative and analytical thought process, to reproduce recent results of others, and to defend his or her work in an oral presentation format.

Basic Structure. The qualifying examination has two components, a written exam and an oral exam. The entire examination is to be completed in one academic semester, with the written exam and the oral exam in the same semester. These are to be no later than the 3rd semester following the student’s admission to the PhD program.

Role of the Advisor. At the time the qualifying examination is given, the student does not necessarily have an advisor who is guiding the student’s research activity. The student may have an academic advisor who can help guide him or her through the qualifying examination process and other early milestones in the PhD program.

Examination Committee. A list of approved courses for the qualifying exam (see attached) will be maintained by the Graduate Programs Committee. The student selects three courses, from this list of approved courses, as topics for the qualifying exam. A three person committee is then selected by the Graduate Programs Committee (or a subcommittee of the Graduate Programs Committee) to test the student on topics from these courses (see below). These three faculty members form the qualifying exam committee for the student. This qualifying exam committee should be established at the beginning of the semester in which the written exam is to be administered, and may not be restructured at any point in the qualifying examination process. This committee is not identical to the dissertation committee.

Written Examination. The written exam will be closed book/closed notes. The student will be tested on material from the three courses they chose. For each course chosen, the associated faculty member(s) writes a question or a series of questions (a “block”), with an emphasis on
graduate-level material related to that course, that would take approximately one hour to complete in a written setting. For each student, the written examination will comprise the 3 blocks written by the 3 committee members, given as one 3-hour exam.

Written Exam Timing. The written exam is given once every semester in the third week. All the written exams are administered at exactly the same time, a 3-hour time block at a time specified by the Graduate Programs Committee.

Written Exam Grading. Each member of the examination committee grades his or her portion of the written exam, on a 0-100 scale. The score on the written exam is the sum of the three components. The pass threshold will be 210 out of 300 points, or 70%.

Written Exam Re-take Policy. Students who fail the written exam on the first attempt will be given a second chance the subsequent semester. Students who fail the written exam on the second attempt are deemed to have failed the qualifying examination and will be dropped from the PhD program.

Transition to Oral Exam. Students who pass the written exam, on either the first or second attempt, will be given a set of questions by the examination committee related to the current literature in their field of interest. The student must prepare a written paper in IEEE or similar format, and an oral presentation in response to these questions. The paper and presentation should not be construed as original and creative research, although they can be used to gauge the student’s thought process and preparedness for undertaking a serious research program. Reproduction of current research results is encouraged. The oral presentation will be delivered as part of the oral examination.

Oral Examination. The student will present his or her paper in a closed session executed by the same members of the chosen written committee. The examination should be scheduled for two hours. The student will defend the paper, and answer other questions from the area of interest, as deemed appropriate by the examination committee. Some questions may be follow-up questions from the written examination.

Oral Exam Timing. All oral examinations will be given during a single one-week time frame in the 10th week of the academic semester or as close as possible taking into consideration faculty schedules.
**Oral Exam Grading.** The student will have passed the oral examination if he or she receives either 1) a unanimous vote of the examination committee, or 2) a majority vote of the examination committee with approval of the ECE Department Chair or Chair of the ECE Graduate Programs Committee.

**Oral Exam Re-take Policy.** Students who fail the oral exam on the first attempt will be given a second chance, within the 14th week of the same semester, or as close as possible taking into consideration faculty schedules. The questions or topic of the paper and presentation, and the format, will remain the same as for the first attempt. Students who fail the oral examination on the second attempt are deemed to have failed the qualifying examination and will not be allowed to continue the PhD program.