

# Requirements and Guidelines for the Ph.D. Degree in Electrical Engineering and Computer Science

Effective for students who are beginning fall 2006 or later.

This document, along with the Program of Study form, supersedes any other written document (including DARS).

## I. Minimum Entrance Requirements

Normally a M.S. degree in Electrical Engineering, Computer Engineering, or Computer Science is expected. Those with an M.S. degree in a related field will be considered. In all cases excellent academic performance at the B.S. and M.S. level is expected. The student's background should reflect an ability to carry out independent supervised research.

## II. Definitions

The "graduate committee," or "EECSGC," is a standing committee appointed yearly by the School Chair and whose function is to administer the graduate programs of the School.

A student's "examining committee" is defined in Section IV c.

The two committees are separate and distinct bodies; however, in some cases there may be one or more members of the EECSGC on a particular student's examining committee.

## III. Degree Requirements

- a. At least 15 quarter hours at the 600 level or above of formal coursework beyond the M.S. is required. Additional coursework may be required in cases where the student's background is found to be insufficient. The need for additional coursework will be assessed by the examining committee. Independent Study or other informal coursework will not count toward your required 15 credit hours.
- b. At least 6 hours must be in Mathematics and/or Physics at the 600 level or above; exceptions must be pre-approved. At least 9 hours must be in EECS. The coursework must be arranged so that the major emphasis is in a single area of EECS (namely, the student's chosen area of specialization). All coursework to be applied to the Ph.D. degree requirements must be approved by the student's examining committee and the Chair of the EECSGC.
- c. No hours below B may be counted toward the Ph.D. More than 4 hours below B will automatically drop the student from the program. The student must maintain a 3.0/4.0 average to remain in the program. Students failing to maintain a 3.0/4.0 average may petition the EECSGC to remain in the program for one additional quarter during which the student's average must be corrected to at least 3.0/4.0. Only one such petition is allowed during the degree program.
- d. All students are required to obtain a passing grade in three (3) quarters of EE/CS 698 Seminar. Students should register for one (1) hour each of three (3) quarters. EE/CS 698 is offered on a pass/fail basis. All students are required to present their dissertation research work in its current state to the seminar at least once. One quarter of ET 602 (Technical Writing Seminar) is also required.

- e. A three-part (Part A, written, Part B, oral, Part C, research proposal) comprehensive examination must be passed. This is taken with the dissertation advisor's approval and must be attempted within two (2) quarters after completing the minimum Ph.D. coursework. Exceptions (such as additional coursework required by the dissertation advisor) must be approved in advance by the EECSGC. (See Section IV.)
- f. Candidacy. After passing parts A and B of the comprehensive, and having had a research proposal accepted by his or her dissertation advisor and the examining committee (Part C), the student is admitted to candidacy and will be so informed by a letter from the Dean of the Russ College of Engineering and Technology.
- g. Dissertation Defense. The candidate must pass an oral examination on his or her dissertation. The dissertation must be submitted to the examining committee at least four weeks prior to the scheduled defense date. Any member of the examining committee, after scrutinizing the dissertation, may request a postponement of the defense. Students scheduling their dissertation defense earlier than two calendar years after the approval of the research proposal must obtain the prior approval of the EECSGC. The minimum amount of time to be reserved for the dissertation defense is three hours.
- h. An acceptable dissertation must be submitted which should be equivalent to a minimum of two calendar years of full-time independent research. A minimum of 72 hours of EE895 (Dissertation) is required. The dissertation must be based on research performed by the student and for which the student has had at least 2 refereed articles published or accepted for publication. Articles which have been accepted, subject to major revisions, are not to be considered until the revisions have been submitted and approved. The student's examining committee will decide which publications are acceptable. The articles may be co-authored. Exceptions to this must be approved in advance by the examining committee. In addition, the student must be a primary author of the articles. Exceptions to this must be approved (prior to the scheduling of the dissertation defense) by the examining committee and the EECSGC.

#### IV. Committees and Advisors

- a. Upon entering the program, the Chair of the EECSGC acts as the student's temporary academic advisor until a dissertation advisor has been obtained. In most cases, the Chair will not assist the student with course selection; rather, he or she will direct the student to EECS faculty members with similar research interests for advice on course selection. The student should understand that giving such advice does not mean that the faculty member has agreed to serve as the student's dissertation advisor. This faculty member will aid the student in course selection for no more than two quarters.

The student should understand that a dissertation advisor is arranged by mutual consent. In no case will the EECSGC or its Chair "assign" a dissertation advisor to a student.

- b. The student must obtain the cooperation of a faculty member to act as a dissertation advisor before the completion of two (2) quarters of formal coursework.
- c. Before completion of three (3) quarters of formal coursework the student, with the aid of the dissertation advisor, must select an examining committee. The examining committee consists of 6 members: the dissertation advisor, who serves as chair, 3 other EECS faculty members, and two College Representatives. The expectation is that each member of the examining committee, with the exception of the College Representatives, should currently be performing research in the student's area of specialization. The College Representatives must come from schools/departments outside of the Russ College.

- d. A Program of Study must be prepared by the student before completing three (3) quarters of formal coursework (15 credit hours) applied to the Ph.D. degree. This Program of Study must be acceptable to the student's examining committee. Program of Study forms may be obtained in the EECS office or on the EECS website. After all required signatures have been obtained, the form is submitted to the EECSGC for final approval. Changes to the Program of Study must be reported to the Graduate Chair by a form available in the Graduate Office.
- e. The examining committee is to be kept informed of the student's research progress. It is strongly encouraged that the student submit quarterly to the examining committee a progress report.

## V. Details of the Comprehensive Examination

- a. The examination will be held upon mutual consent of the student and the examining committee.
- b. The examination consists of three separate parts:

Part A--Written. This is a one (1) day written examination covering the student's chosen area of specialization. The exam will be 3-4 hours in duration. The exam will be prepared by the student's examining committee. The exam is intended to evaluate the student's background in his/her chosen specialization. Exam topics will be drawn primarily from graduate-level coursework in the student's chosen area of specialization. Related questions from Mathematics and/or Physics are acceptable. The examining committee will decide on the nature (i.e., open book, closed book) and format of the exam. The format and content of the exam must have the approval of the EECS Graduate Chair. The examining committee will then communicate the exam format, schedule, and location in advance and in writing to the student.

Part A must be passed in no more than two attempts. The second attempt must be made within three (3) months of the first. If the student fails the exam on the second attempt he or she will be dropped from the Ph.D. program. If the student passes, he or she shall continue with Part B.

Part B—Oral Exam. This is a one day<sup>1</sup> exam taken within one (1) quarter of passing Part A. The exam is intended to evaluate the student's ability to carry out independent supervised research in his/her chosen area of specialization. The exam is administered by the student's examining committee. The student should be prepared to answer questions on his/her chosen area of specialization and general background. The student must demonstrate understanding and competence in the state-of-the-art of his/her chosen area of specialization and general EE/CS background in order to pass this part.

Part B may be attempted no more than two (2) times and the second attempt must be made within three (3) months of the first. If the student fails the exam on the second attempt he or she will be dropped from the Ph.D. program. If the student passes, he or she shall continue with Part C.

Part C—Research Proposal Defense. This is a one day<sup>1</sup> exam, taken within one quarter of passing Part B. A written research proposal must be submitted to the examining committee two weeks prior to the proposal defense (Part C). The defense cannot be taken until Parts A and B are passed. The defense is intended to evaluate the originality, significance and depth of the proposed research. The student should be prepared to answer questions regarding his or her research proposal. In the event that Part C is failed on the first attempt the student's examining committee will designate a time for the second attempt not more than three months after the

---

<sup>1</sup> This part has no set time limit; however, the exam typically lasts two (2) to four (4) hours. In arranging times and locations for this exam, at least four (4) hours should be allotted.

first. Part C may be attempted no more than two times, and if the student fails on the second attempt, he or she will be dropped from the Ph.D. program.

The proposal must be written according to the "Guidelines for Dissertation Proposal" which is available on the web or obtained in writing from the Graduate Office.

The acceptability of the student's performance on each part of the comprehensive exam, as well as the final dissertation, will be determined by a majority vote of the examining committee. Note that the College Representative is the only committee member with veto power.

## VI. Student Records

The student's record will contain documentation of:

- a) Program of Study
- b) the results of Part A of the comprehensive exam
- c) the results of Part B of the comprehensive exam
- d) the results of Part C of the comprehensive exam
- e) a copy of the student's research proposal approved by the student's examining committee
- f) any documents deemed necessary the dissertation advisor or Graduate Chair

## VII. Transfer of Credit

- a) Credit Transferred from Another Institution.

A maximum of 6 quarter hours, or the equivalent, may be transferred from an accredited university and applied toward a student's Ph.D. degree providing:

1. The credits are designated at the transferring institution as graduate level only.
2. The credits were obtained by taking formal coursework within the past five years. No correspondence credit will be accepted.
3. Grades earned on all transfer credits are B or better.

- b) Credit Obtained While Enrolled in the M.S. Degree Program in EECS at Ohio University.

A maximum of 6 quarter hours of credit obtained while pursuing the M.S. degree in EECS at Ohio University may be applied toward the Ph.D. requirements providing:

1. The credits were obtained by taking formal coursework at the graduate level. No correspondence credit will be accepted.
2. Grades earned on all transfer credits are B or better.
3. The credit was earned during the past year. The purpose of this requirement is to avoid delay in the submission of the M.S. thesis.
4. The credits are not applied toward the M.S. degree.

## VIII. Time Limit

Students must complete all requirements for the degree within seven calendar years from the date of admission to the Ph.D. program. This is an Ohio University requirement.