ECE Graduate Student Policy and Guideline

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Outline

• Welcome
• Academic Advisor and Committees
• Course Requirements
• Course Registration
• Academic Progress
• Financial Support
• Important Paperwork
• Graduate Student Reference Material
NOTE

• Graduate School has the final decision and interpretation to any program policies, decisions, and requests.
Academic Advisor

Academic Advisor

• For either the MS or PhD, you need to have a research/academic advisor
  – Find an adviser early (first or second semester)
  – Choose an advisor based on the area of specialization of interest to you

• Advisors Role:
  – Guide you with course selections, research topic, goals
  – Provide you with research assistantships, fellowships
  – Serve as the chair of your MS or PhD committee

• DGS Role:
  – Administrative types of issues
  – Default advisor for course selection before the permanent advisor is found.
Research Areas

- Nanoelectronics
  - Profs Chen, Hastings, Lumpp (JK), Singh, Thapliyal
- VLSI
  - Prof Elias, Thapliyal
- Electro-optics
  - Prof. Hastings
- Electromagnetics
  - Profs Adams, Lu, Smith, Young
- Computer Engineering
  - Profs Dietz, Heath, Lumpp, Ashley
- Communications
  - Profs Donohue, Hassebrook
- Signal Processing
  - Profs Cheung, Donohue, Hassebrook, Lau
- Controls
  - Profs Walcott, Zhang
- Electromechanics
  - Profs Cramer, Ionel, Liao, Dolloff
- Power Electronics
  - Prof. Cramer, Sottile, Ionel
- Manufacturing Systems
  - Profs Holloway, Zhang
- Nanotechnology
  - Profs Chen, Hastings, Lumpp (JK), Singh
- Visualization
  - Profs Cheung, Hassebrook, Lau
- PEIK
  - Profs Holloway, Liao, Sottile, Dolloff, Cramer
Course Requirements

Core Courses

• All graduate students (MS and PhD) must satisfy the core course requirement: You must take or have equivalent for at least 3 of the following courses:
  - EE 611 Deterministic Systems (Fall)
  - EE 621 Electromagnetic Fields (Fall)
  - EE 640 Stochastic Systems (Spring)
  - EE 661 Solid-State Electronics (Spring)
  - EE 685 Digital Computer Structure (Fall)

- PhD students must score B or better in core courses
MS – Thesis/Project
Course Requirements

• 24 hours for MS thesis and 30 hours for MS project. The required graduate course work: EE 500 level, 600 level (including 3 core courses), EE783, or 4XX-G from other departments
• At least 1/2 must be at the 6XX level or EE783
• EE 783 (Independent study) –
  • Allow 3 hours of EE 783 towards MS
  • Enrollment form: http://www.engr.uky.edu/ece/students/graduate/degree/
• At least 2/3 must be EE courses
• After your course work is completed, you must enroll in EE 748 (MS Thesis Research) (0 hours) or EE784 (non-thesis option).
  • Enrollment forms and procedures found on the above website.

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MS Thesis/Project Advisor and Committees

MS Committees:

• Your advisor (chair if having graduate faculty status) plus at least 2 other faculty
  – At least two members must be from ECE

• At least two faculty must have Graduate Faculty Status with at least 1 having Full Graduate Faculty Status

• Must be set before the request for the MS final examination form is filed
MS – Thesis Option

• Course Requirements – 2 to 3 Semesters
• Thesis – 6 to 12 months
• Final defense
  – 2 weeks prior to your oral defense you need to:
    • Finished all course work (or will finish in the same semester)
    • Submit a final exam request form to the Graduate school (web submit)
    • No I or S grades
    • Overall GPA: 3.0 or better
    • Submit your written thesis to your committee prior to your defense.
• Tips:
  – Find an advisor early
  – Begin your thesis topic as early as possible
  – Keep yourself (and your advisor!) focused
  – **Total time: no more than 6 years**
  – Concurrent programs:
    • Advisor/DGS Approval (both programs)+Dean of graduate school
    • May use up to 9 hours to both programs

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MS – Non-Thesis Option

• Course Requirements (30 hours) similar to MS thesis course requirements – 3 or more semesters

• Student must register for EE 784 the semester they will complete their project
  – EE 784 is a 3 hour course (NOT INCLUDED in your 30 hours), and receives a letter grade
  – Registration form: www.engr.uky.edu/ece/students/graduate/degree/

• Oral Project Defense
  – Must be taken during the semester you register for EE 784. You must also submit an online request form for final defense to the Graduate School.
  – This also requires 3 faculty committee members (your advisor should be the chair of the committee).

• Total Time: An MS Project can be completed in 2 years for full time students (total time allowed: 6 years).

• Tips:
  – Outline your project topic with the advisor, and make sure it can be completed in 1 semester.
  – International students: Must maintain 9 hours of credit every semester until finishing MS Project, including EE 784
PhD Course Work

• PhD students in EE must complete 42 hours of course work prior to taking their oral qualifying exams administered by the Graduate School.
  – 500, 600, and 700 level courses (including 3 core courses); May count up to 2 EE783.
  – At least half of the courses must be 600 level or higher.
  – At least 2/3 of the courses must be in EE
  – All PhD students must fulfill the technical writing requirement (WRD 204): Not counted in 42 credit hours (recommend to take before the qualify exam)

• PhD students with MSEE degree
  – MSEE + 24 hours of course work
    • 18 hours if you have a US accredited MS degree
PhD Qualifying Exam

• Written Qualifying Exam administered by the Department
  – Scheduled through the DGS
    • Must be passed by the end of your 3rd semester
      – Exam can be taken a maximum of 2 times
    • Exam is offered 2 times per year (Fall/Spring)
  – Contents
    • Basic circuit theory (EE211/EE221), Logic (EE280), Linear Systems (EE421), Ethics
    • Choose three topics prior to the exam:
      – Semiconductor Devices (EE 360), Computer Organization (EE 380), Electromechanics and Power (EE 415), Introduction to Electronics (EE 461), Electromagnetics (EE 468), Computer Architecture (EE 480)
• MS Students with non EE degree are welcome to take QE to fulfill EE core requirements.
PhD Qualifying Exam

• Oral Qualifying Exam
  – Scheduled through the Graduate School
    • Must have completed all course work.
    • Must be taken within 2 semesters of completing coursework (required to take QE within five years of entry into the program)
    • Administered by your PhD Advisory Committee
  – Purpose
    • Evaluate student’s ability to conduct research; Evaluate the depth of knowledge in the student’s field of research
  – Outline
    • Committee assigns research topic to PhD student
    • Student completes:
      – Written proposal on the topic;
      – Oral presentation of their proposal
      – Question/Answer period defending proposal

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PhD Candidates’ MS Option

After qualifying exam and producing some research results, a PhD candidate with a BS degree have an option to obtain a MS degree.

The student needs to meet all the course requirements for both the MS degree and the PhD degree.

The research results used for the MS thesis can not be used for PhD dissertation.
PhD Academic Advisor and Committees

PhD Committees:

- Your advisor (chair if having full graduate faculty status) plus at least 3 other faculty
  - One member must be from outside ECE
    - Best way to identify outside member is to take courses outside of EE!
- All faculty must have Graduate Faculty Status with at least 3 (including the chair) having Full Graduate Faculty Status
- Must be set before the request for qualifying examination form is filed
Role of the PhD Advisory Committee

• The committee has the following roles:
  – Pre-Qualifying exam
    • Direct the student in a course curriculum that will provide them with a sufficient foundation to pursue their research in the field of interest
  – Qualifying Exam
    • Administer of the oral qualifying exam
    • Determine if the student is sufficiently prepared academically to continue with dissertation research
    • Determine if the student’s proposed research plan is sufficient for a PhD
  – Conduct Annual Reviews
PhD TimeLine

• Complete course work
• Written Qualifying exam
• Oral Qualifying Exam
  – Should enroll in EE 767 in the semester the qualifying exam is administered
  – Register for EE 767 every semester post qualifying
• Dissertation research (1 to 3 years)
• Final exam (no later than 5 years after qualify exam)
  – Submit Request online to graduate school 6 weeks prior to expected defense date
  – Schedule the final exam a minimum of two weeks prior to the exam date.
PhD Annual Review

• Every PhD Student must be reviewed annually by their PhD advisory committee
  – Purpose: Review the progress of the PhD student and provide constructive feedback

• Two components:
  – Formal written summary of the students research
    • Ideally should form a framework for the dissertation
  – Formal presentation before advisory committee
    • Provide overview of research objectives, accomplishments, future work, and timeline

• Notes:
  – First year PhD students must also take annual review
    • No adviser or committee? – DGS
  – Oral qualifying exam serves as an annual review
Academic Progress
(All PhD&MS Students)

• Must maintain at least a 3.0 grade point average to avoid probation

• If you are on probation, you have 9 hours to raise your GPA to $\geq 3.0$ before being dismissed from Graduate School

• Graduate students are allowed one course “repeat” option

• Remedy: Avoid any C or lower!!
Important Paperwork

- Recommendation for a final examination and the Thesis approval form must be filed with the Graduate School \textit{at least two weeks} prior to the date of the examination for Master’s students.

- Application for Degree Cards in the Graduate School must be submitted within \textit{30 days} after the beginning of the semester (15 days in the summer session) in which they expect to graduate.
  - myuk account
• Notification of Intent to Schedule a Final Doctoral Examination must be submitted at least 8 weeks before the examination

• Request for Final Doctoral Examination must be submitted at least 2 weeks before the exam

• Doctoral Final Examinations may only be scheduled when classes are in session (fall and spring semesters, four- and eight-week summer sessions).
Graduate Student Reference Material

Here are some important web sites

- http://www.engr.uky.edu/ece/students/graduate/degree/
- http://www.research.uky.edu/gs/
- http://www.research.uky.edu/gs/gsforms.html
- www.engr.uky.edu/ece/index.html
- http://www.gradschool.uky.edu/
- http://www.engr.uky.edu/ece/students/graduate/
700-Level Courses

- **EE 748** – Masters Thesis Research in EE (0-hours)
  - MS Thesis Option – taken after completing coursework.
  - Register every semester in EE 748 until completed
    - 0 hours of EE 748 is considered full time (No tuition)

- **EE 784** – Masters Research Project (3 hours)
  (In the last semester, file course reduction form to OIA to maintain full time)
  - Taken after completing 30 hours (or in conjunction with last one or two courses to complete 30 hours)
  - Taken only once
  - Requires signed agreement between student/adviser submitted to DGS
  - Schedule MS project defense at the end of the semester
    - Failing to do so will result in an “I” or “E”, based on recommendation of the adviser.
• EE 767 – Dissertation Residency Credit (2-hours)
  - Taken every semester after you complete all the qualifying exam requirements until you graduate
    - Can be taken the semester you take your oral qualifying exam
    - CAN-NOT be taken before qualifying exam
    - Must have at least 2 semesters of EE 767 prior to defending dissertation
    - Full time status (2 hours of EE 767)

• EE 790 – Research in Electrical Engineering (1 - 9 hours)
  - Taken after completing course work, and before taking oral qualifying exam.
    - Not counted to course credit hours.
    - Maximum of 3 semesters allowed.

• EE 783 – Independent Study (1 – 3 hours)
  - 1 semester independent study project under guidance of an EE professor
    - Should be equivalent effort as a 1 semester EE course
    - Typically, research project in a specialized area not covered in a course offered
    - MS students: 3 hours max, PhD students: 6 hours max.
    - Requires signed agreement between student/professor submitted to DGS
Special Course Enrollment Forms

http://www.engr.uky.edu/ece/students/graduate/degree/
For more information

http://www.gradschool.uky.edu/

http://www.engr.uky.edu/ece/students/graduate/degree/
   (Especially: current student ➔ Bulletin)

http://www.engr.uky.edu/~cclu/ethics