

## UNH ECE MS EE Program Guidelines

Approved by ECE Faculty on December 6, 2016

### Before coming to UNH:

1. Identify one or more faculty champions. These are regular or affiliate UNH ECE faculty who might be interested in serving as your advisor and work with you on research:
  - a. Review the work of UNH ECE faculty. Identify one or more faculty members whose research matches your interests.
  - b. Complete the pre-application. Name one or more UNH ECE professors whose research matches your interests.
  - c. Prepare a statement of research interest to share with potential faculty champions. Focus on accomplishments (such as publications, projects, and technical positions you held), and on areas of interest for research. Read this post before you write the statement: <http://bit.ly/1OLW0J7>.
  - d. If your pre-application is approved, contact one or more UNH ECE faculty who are conducting research in an area that you are interested in working. Ask them if they are interested in becoming your faculty champions. Faculty champions argue for accepting a student into the MS EE program and possibly also for providing funding for that student. When contacting UNH ECE faculty, send them your CV, your statement of research interest, any publications you might have, and questions about their research.
2. Submit your application to the UNH Graduate School. In your statement of purpose identify one or more UNH ECE faculty champions.
3. Note that the Accelerated Master's program is available for UNH seniors. To qualify you must have a GPA of 3.2 or higher at the time of application.
4. Find source of full or partial funding: TA, RA, scholarship, tuition waiver, self-financing, or other. Successful applicants for a TA, RA, UNH-based scholarship, or a tuition waiver will have strong recommendation from a faculty champion. Also note that students in the Accelerated Master's program are not eligible for TA and RA positions, scholarships, and tuition waivers before receiving their BS degree.

### At the beginning of your MS EE studies at UNH:

1. You will be assigned a UNH ECE faculty advisor, most likely your faculty champion.
2. With your advisor:
  - a. Identify research topic.
  - b. Identify courses that you will need to take to help with your research.
3. Take ECE 900A and B during the first two semesters at UNH for a total of 4 credits. Students in the Accelerated Master's program normally take these courses after completing their BS degree.

### Complete MS EE program

1. After completing ECE 900 A and B, give one research talk in the ECE department each calendar year, and attend at least 50% of all research talks given by all graduate students (MS and PhD). The Graduate Committee schedules research talks, and certifies

your attendance at the talks. The oral presentation given for the thesis defense is not considered a research talk.

2. Complete coursework helpful for your research as identified by you and your advisor:
  - a. The credit requirement is 34 credits, with 4 credits for ECE 900 A/B, 12 credits at the 900-level, and 6 credits for thesis research. The remaining 12 credits can be either at the 800- or 900-level.
  - b. Up to 12 credits earned in non-ECE courses numbered 700-799 may be taken for graduate credit by MS EE degree students provided the courses are petitioned and approved by the dean of the Graduate School. A student may petition that a maximum of 12 graduate credits taken prior to admission in the UNH ECE master of science degree program be applied to fulfill the degree requirements.
  - c. Under certain circumstances it may be desirable to take courses outside the ECE department to attain the goals outlined in the student's program of study. In these cases, up to two non-ECE 900-level courses are allowed without petition, provided that they are approved by the student's academic adviser and that the student take at least two 900-level courses (neither of which may be independent studies) within the department. To take more than 2 non-ECE courses (either 800 or 900 level) students must petition the ECE Graduate Committee.
3. Work with your advisor to assemble your MS EE Thesis Committee.
4. Defend the thesis.

#### **Rules for Accelerated Master's program from UNH Graduate Course Catalog**

Qualified senior students at the University of New Hampshire may be admitted to the Graduate School provided they have followed normal application procedures; they must have been admitted for the semester in which they wish to enroll in courses for graduate credit. A 3.20 cumulative grade-point average is normally required to be considered for admission to the accelerated master's program.

Such seniors are normally admitted prior to the start of their last undergraduate semester, but may be eligible to apply for admission to the first semester of their senior year. Seniors who have been admitted under early admission may register for a maximum of 12 credits of graduate-level courses prior to completing their bachelor's degree. Such courses may upon recommendation of the department and approval of the Graduate School count toward both a bachelor's and master's degree.

When seniors admitted to the accelerated master's program have registered for graduate courses, they must maintain a grade-point average of 3.20, complete their undergraduate degree as planned, and pass graduate courses taken for credit with a grade of B- or better. If these conditions are not met, admission is withdrawn.

Not all graduate programs participate; each program's faculty retain discretion regarding whether their program admits students under the accelerated master's program, as well as the maximum number of graduate credits permitted (not exceeding 12; e.g., some programs will accept one course, others two). Applicants are strongly encouraged to meet with the graduate coordinator in the program's faculty to discuss specifics.

Dual-credit forms must be completed and approved by the dean of the Graduate School at the beginning of the semester for which dual credit is sought.

## Thesis Defense Rules

- **Purpose:** Demonstrate ability to use the general tools of science to create new scientific knowledge or to complete engineering development projects. Demonstrate a specific contribution to a field of research in the realm of electrical engineering or computer engineering.
- **When?** MS EE students must defend their thesis within six years after matriculation (enrollment after admission).
- **How is the student tested?** The student should demonstrate that they are able to use the general tools of science to create new scientific knowledge or to complete engineering development projects, and a specific contribution in a field of research in the realm within electrical/computer engineering. The student does this by submitting a written thesis document and giving an oral presentation.
- **Material:** Student supplies a draft version of the thesis to committee 30 days prior to exam. Student supplies final version 2 weeks prior to exam; final document is available to entire UNH ECE faculty.
- **Announcement:** Exam is announced to UNH ECE faculty, and the public, 2 weeks in advance.
- **Thesis Committee:** The committee chair is the student's UNH ECE MS EE advisor. The committee has two other members: two UNH ECE professors (affiliate faculty are eligible), or one UNH ECE professor and one non-UNH ECE member (with a PhD). The non-UNH ECE member should be an expert in the student's field of research.
- **Format:** Thesis document is reviewed by Thesis Committee in writing. Thesis is also available to UNH ECE faculty. Oral presentation is open to the public; presentation is followed by a public question period, and a separate committee-only question period. Finally, the committee meets in private to make a recommendation by majority vote. The oral presentation and public questions are no longer than 60 minutes. The entire event takes no longer than 120 minutes.
- **Thesis committee written review:** The thesis committee chair receives written reviews from the other two members before the defense. The suggestion is that each review should provide the following:
  - Thesis overview with assessment of contribution,
  - Overall recommendation (pass/fail).Thesis committee chair synthesizes recommendations into a committee recommendation, to be accepted by a majority vote of the committee after the oral defense.
- **To pass:** Committee recommends based on written reviews and oral presentation, and informs the student of the recommendation immediately after the oral presentation. The committee does not inform the student of the exact vote. Within 7 days of the defense the committee informs the UNH ECE faculty of its vote (with vote count), and provides the three thesis review documents. The entire UNH ECE faculty votes on the recommendation within 30 days of the notification. Graduate Committee officially informs student within 14 days of the faculty vote.
- **Under what circumstances can a student, who failed to defend the thesis, defend it again?** If a student fails to defend the thesis their committee will recommend to the entire UNH ECE faculty either to ask the student to withdraw from the MS EE program, or to allow them to defend the thesis again. The recommendation is decided by majority vote. The entire faculty votes within 30 days of being notified by the thesis committee. Graduate Committee officially informs student within 14 days of the faculty vote. If the vote is positive, the student must defend the thesis at most one calendar year after the original defense date.
- **Failing to defend thesis twice.** If the student fails to defend the thesis a second time, they must withdraw from the MS EE program.