Master’s Program Handbook

Electrical and Computer Engineering
**MASTER’S PROGRAM HANDBOOK**

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1. INTRODUCTION

This handbook contains information about the Master’s program offered by the School of Electrical and Computer Engineering (ECE) at Purdue. Included is relatively detailed information about degree requirements, minimum academic standards, registration, and plans of study. Also included is information about faculty advisors for non-thesis students, the thesis advisory committee, and the Master’s thesis.

A strength of the academic component of the Master’s program at Purdue is that each student creates his/her own plan of study (POS), a document that defines each student’s academic program. Degree requirements afford flexibility for developing a plan of study that best suits each students’ needs and professional objectives. The information in this handbook is intended to assist students in generating a plan of study with proper faculty supervision. In developing a plan of study, students should consult with their faculty advisor (all non-thesis tracks) or their major professor (thesis track). A plan of study requires the approval of the faculty advisor (non-thesis) or the advisory committee (thesis), as well as the approval of the ECE Graduate Coordinator and the Graduate School.
A student in the Master’s program must select one of the seven ECE Research Areas listed in Table 1.1 as his or her Primary Area. The primary area encompasses the body of knowledge each student chooses for his or her professional expertise.

### Table 1.1 ECE Research Areas

<table>
<thead>
<tr>
<th>Research Areas</th>
<th>Core Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Control (AC)</td>
<td>ECE 60200</td>
</tr>
<tr>
<td>Communications Networks and Signal and Image Processing (CS)</td>
<td>ECE 60000</td>
</tr>
<tr>
<td>Computer Engineering (CE)</td>
<td>ECE 60800</td>
</tr>
<tr>
<td>Fields and Optics (FO)</td>
<td>ECE 60400</td>
</tr>
<tr>
<td>Microelectronics and Nanotechnology (MN)</td>
<td>ECE 60600</td>
</tr>
<tr>
<td>Power and Energy Devices and Systems (PE)</td>
<td>ECE 61000</td>
</tr>
<tr>
<td>VLSI and Circuit Design (VC)</td>
<td>ECE 55900</td>
</tr>
</tbody>
</table>

Entries in the second column of Table 1.1 are the Core Courses associated with each of the seven ECE areas. All MS students must take the core course in their primary area. Courses offered by a student's research area are Primary Area Courses. Courses offered by ECE research areas other than the student's primary area or qualified courses from other Schools at Purdue are Related Areas Courses. Courses on a plan of study must be identified as ECE Primary Area or Related Area courses.

There are several tracks for students to earn a Master's degree. These are:
1. Thesis track
2. Project track
3. Course-only track
4. Online track

For qualifying Purdue ECE undergraduates, a fifth option is available.
5. 4+1 accelerated track

Students who enter the Master’s program under one track may be eligible to transfer to another MS track. Students who wish to continue graduate study for a PhD must apply for admission to the PhD program.

In addition to this handbook, there are other resources available in the ECE Graduate Office (located in Room 140 of the MSEE Building) and on the ECE Graduate Program website.
2. MASTER’S DEGREES

The School of Electrical and Computer Engineering offers one Master of Science in Electrical and Computer Engineering (MSECE) degree, regardless of the track a student chooses to earn the degree.

Persons eligible for the MSECE degree shall have graduated with a Bachelor's degree in Electrical and Computer Engineering. Alternatively, students with Bachelor’s degrees earned in fields of science or engineering other than Electrical and Computer Engineering may pursue graduate degrees in Electrical and Computer Engineering, but they are responsible for acquiring knowledge of the undergraduate material that form the prerequisites for the specific graduate courses in their plans of study.

3. DEGREE REQUIREMENTS

Students must complete 30 credit hours of an approved combination of course work, thesis research, or project as specified by the track chosen to earn the MS degree (see details for each track below). At least 15 of the credit hours must be ECE graduate-level credit hours. All course credit hours must appear on the plan of study approved by the student’s advisory committee for those writing a thesis, or by a faculty advisor in all other cases.

3.1 THESIS TRACK DEGREE REQUIREMENTS

This track provides students with a classical experience of writing a thesis document that solves a substantial ECE-related problem. This experience, combined with graduate courses that delve into related ECE topics, prepares students for careers in research or pursuing a doctoral degree.

Core Course Requirement
Students must successfully complete a minimum of two core courses. One of these must be the student’s primary area core course. The second core course adds breadth of ECE knowledge to the student. Regional campus courses or transfer courses do not satisfy the core course requirement.

Math Requirement
A minimum of 3 approved math credit hours are required for the thesis track. Appendix A lists the approved mathematics, statistics, computer science, and physics courses meeting the math requirement.
Research Credit Requirement
Students on the thesis track are required to register for ECE 69800 research (thesis) credits. Students should check with their Major Professor to determine the number of ECE 69800 hours appropriate for their program. ECE 69800 hours count toward the 15 credit hour ECE graduate-level credits requirement. ECE 69600 and ECE 69700 credit hours cannot satisfy degree requirements for thesis track and cannot appear on a student’s POS.

Summary of Course and Credit-Hour Requirements
Table 3.1 summarizes the preceding course and credit hour requirements for the Thesis Track.

Table 3.1: Summary of Course and Credit-Hour Requirements for Thesis Track

<table>
<thead>
<tr>
<th>Required Core Courses (Credit Hours)</th>
<th>2 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Math Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td>Allowed 69600/69700 Credit Hours</td>
<td>0</td>
</tr>
<tr>
<td>Total Required Graduate-Level ECE  Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Includes 69800</td>
<td></td>
</tr>
<tr>
<td>Required Credit Hours on Plan of Study</td>
<td>30</td>
</tr>
<tr>
<td>18-24 Credit Hours non-thesis</td>
<td></td>
</tr>
</tbody>
</table>

* Students should read Section 5 pertaining to writing and defending the MS thesis.

3.2 PROJECT TRACK DEGREE REQUIREMENTS

This track was created to build technical and professional skills for students preparing for careers in industry. Based on input from industrial advisors, career-relevant skills developed in this program include technical depth in a chosen field, familiarity with concepts in related technical areas, and effective communication/presentation competencies. Principles of teamwork/leadership, and business concepts, such as intellectual property and entrepreneurship/intrapreneurship, are included in this track. Unique features of this track are the yearlong “Ideas to Innovation” project course sequence and a set of 1 credit hour courses designed to enhance the technical breadth of students in this track. See the ECE Graduate website for a complete list of available 1 credit hour courses. Time to completion of project track requirements is four semesters, which can include a summer internship. An accelerated option is also available where students can finish in one calendar year (Fall-Spring-Summer semesters). Students in this track should select the concentration of “Innovative Technologies-Professional Masters” in the plan of study.
Core Course Requirement
Students must successfully complete the core course in their primary area. Regional campus courses or transfer courses do not satisfy the core course requirement.

Math Requirement
A minimum of 3 approved math credit hours are required for the project track. Appendix A lists the approved mathematics, statistics, computer science, and physics courses meeting the math requirement.

Ideas to Innovation Course
All students in the Project Track must complete Ideas-to-Innovation I-III, a 3-semester course sequence focused on an intensive design project and professional development exercises. Students are expected to take Ideas to Innovation I during their first Fall semester, and Ideas to Innovation II in the subsequent (Spring) semester. Student teams consisting of members from different technical areas will select and complete a significant design project. During the fall semester, teams will propose and initiate work on system level projects enabled by new technologies. The bulk of the technical work will take place during spring semester and be completed during either the Summer session or the subsequent Fall semester. Processes for project proposals, approvals of project concepts, design reviews, and final reports are modeled on those of leading technology innovation companies.

Waiver of Graduate Seminar Requirement
ECE 69400 Graduate Seminar is not required for the project track.

Summary of Course and Credit-Hour Requirements
Table 3.2 summarizes the preceding course and credit hour requirements for the Project Track.

Table 3.2: Summary of Course and Credit-Hour Requirements for Project Track

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses (Credit Hours)</td>
<td>1 (3)</td>
</tr>
<tr>
<td>Technical Depth (including core course)</td>
<td>9-12</td>
</tr>
<tr>
<td>Breadth Credit Hours</td>
<td>6-9</td>
</tr>
<tr>
<td>Required Math Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td>Ideas to Innovation Project Credit Hours</td>
<td>9</td>
</tr>
<tr>
<td>Total Required Graduate-Level ECE Credit Hours</td>
<td>15</td>
</tr>
<tr>
<td>Required Credit Hours on Plan of Study</td>
<td>30</td>
</tr>
</tbody>
</table>
3.3 COURSE-ONLY TRACK DEGREE REQUIREMENTS

Students in this track satisfy degree requirements solely through academic courses on the WL campus. This track deepens a student’s understanding of ECE subject matter far beyond that of an undergraduate. This track positions students well to earn a PhD in one of the ECE Research Areas, start a career in industry, or move into other professions such as medicine, business, finance, or law. Students following this track can take 1-credit courses, pending availability.

Core Course Requirement
Students must successfully complete a minimum of two core courses. One of these must be the student’s primary area core course. The second core course adds breadth of ECE knowledge to the student. Regional campus courses or transfer courses do not satisfy the core course requirement.

Math Requirement
A minimum of 6 approved math credit hours are required for the course-only track. Appendix A lists the approved mathematics, statistics, computer science, and physics courses meeting the math requirement.

Research Credit Requirement
Research is not required for this track. ECE 69600 and ECE 69700 credit hours are allowed on the plan of study.

Summary of Course and Credit-Hour Requirements
Table 3.3 summarizes the preceding course and credit hour requirements for the Course-Only Track.

| Table 3.3: Summary of Course and Credit-Hour Requirements for Course-Only Track |
|-----------------------------------------------|-----|
| Required Core Courses (Credit Hours)           | 2 (6) |
| Required Math Credit Hours                     | 6   |
| Allowed 69600/69700 Credit Hours               | 3   |
| Total Required Graduate-Level ECE Credit Hours | 15  |
| Required Credit Hours on Plan of Study         | 30  |
3.4 ONLINE TRACK DEGREE REQUIREMENTS

This track provides students the opportunity to earn an MS degree from any location on the planet. Track requirements are identical to those of the Course-Only track for on-campus students. Students will acquire a deep understanding of a Research Area while gaining breadth through 1- and 3-credit hour courses. Similar to the Course-Only track, this track enables students to start careers in industry or pursue careers in medicine, business, finance, or law. Application to the ECE doctoral program is possible provided the student can relocate to the WL campus.

Core Course Requirement
Students must successfully complete a minimum of two core courses. One of these must be the student’s primary area core course. The second core course adds breadth of ECE knowledge to the student. Regional campus courses or transfer courses do not satisfy the core course requirement.

Math Requirement
A minimum of 6 approved math credit hours are required for the course-only track. Appendix A lists the approved mathematics, statistics, computer science, and physics courses meeting the math requirement.

Research Credit Requirement
Research is not required for this track. ECE 69600 and ECE 69700 credit hours are not allowed on the plan of study.

Summary of Course and Credit-Hour Requirements
Table 3.4 summarizes the preceding course and credit hour requirements for the Online Track.

<table>
<thead>
<tr>
<th>Table 3.4: Summary of Course and Credit-Hour Requirements for Online Track</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core Courses (Credit Hours)</td>
</tr>
<tr>
<td>Required Math Credit Hours</td>
</tr>
<tr>
<td>Allowed 69600/69700 Credit Hours</td>
</tr>
<tr>
<td>Total Required Graduate-Level ECE Credit Hours</td>
</tr>
<tr>
<td>Required Credit Hours on Plan of Study</td>
</tr>
</tbody>
</table>
3.5 “4+1” BS/MS TRACK DEGREE REQUIREMENTS

Purdue ECE undergraduates who qualify, may earn an MS degree in two academic semesters (Fall and Spring) after their BS graduation. Students accepted into this track may double count up to 12 credit hours of graduate level courses toward both BS and MS degree requirements. Eligible courses, taken when a student is an undergraduate, include all 50000- and 60000-level ECE courses. This track is designed for students to satisfy MS degree requirements in two semesters assuming the student follows a course-only path to the MS degree. The information below is provided based on the assumption of a course-only approach. Approval to double count up to 12 credit hours, however, applies to all tracks described above. Purdue students choosing to pursue Thesis or Project tracks for the MS degree must understand that time to completion of MS requirements may take longer than “1” academic year (Fall and Spring semesters) because thesis research and project execution timelines may push MS graduation beyond two semesters.

Core Course Requirement
Students must successfully complete a minimum of two core courses. One of these must be the student’s primary area core course. The second core course adds breadth of ECE knowledge to the student. Regional campus courses or transfer courses do not satisfy the core course requirement.

Math Requirement
A minimum of 6 approved math credit hours are required for the course-only track. Appendix A lists the approved mathematics, statistics, computer science, and physics courses meeting the math requirement.

Research Credit Requirement
Research is not required for this track. ECE 69600 and ECE 69700 credit hours are allowed on the plan of study.

Qualification Criteria for Program Acceptance
Purdue ECE undergraduates with a 3.5 GPA after semester 4 (sophomore year) may apply for the program. Provisional acceptance is based on the student maintaining at least a 3.4 GPA in their undergraduate courses at the time of graduation, and a grade of B or higher on the graduate level courses taken as an undergraduate. Grades below B on graduate level courses may not be double counted.
Summary of Course and Credit-Hour Requirements
Table 3.5 summarizes the preceding course and credit hour requirements for the Course-Only Track.

Table 3.5: Summary of Course and Credit-Hour Requirements for Course-Only Track

<table>
<thead>
<tr>
<th>Required Core Courses (Credit Hours)</th>
<th>2 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Math Credit Hours</td>
<td>6</td>
</tr>
<tr>
<td>Allowed 69600/69700 Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td>Total Required Graduate-Level ECE</td>
<td>15</td>
</tr>
<tr>
<td>Credit Hours</td>
<td></td>
</tr>
<tr>
<td>Required Credit Hours on Plan of Study</td>
<td>30</td>
</tr>
</tbody>
</table>

3.6 Other Requirements

Graduate Seminar Requirement
ECE graduate students in the Thesis, Course-Only, and 4+1 Tracks must satisfactorily complete one semester of the ECE Seminar, ECE 69400. This course carries no credit but a grade of Satisfactory or Unsatisfactory is assigned at the end of the semester. *ECE 69400 should not be listed on the plan of study. Also, it is strongly recommended that students take EE 69400 during their first year.* Students in the Project Track receive information similar to that disseminated in ECE 69400 in their Ideas to Innovation course sequence. Students in the Online Track are typically employed in career jobs and the professional development component of ECE 69400 would be redundant.

Responsible Conduct of Research Course Requirement
All ECE graduate students must satisfactorily complete the Responsible Conduct of Research course. This is an online course offered through Collaborative Institutional Training Initiative (CITI). The course should be completed during the first semester of graduate studies. When the course has been completed the student should submit a copy of the certificates of completion to the ECE Graduate Office.

English Requirement
All ECE graduate students must demonstrate acceptable proficiency in written English before admission. Methods that may be used to fulfill the English requirement are detailed in Appendix C.

Undergraduate Credit Hours
In special situations, students may include undergraduate courses in their graduate POS. Students wanting or needing to refresh their knowledge of a subject which they have taken in their undergraduate studies should take the undergraduate course, but
not include it on their plans of study to satisfy the degree requirements. Undergraduate courses on the POS must be specifically approved by the student’s Major Professor or Faculty Advisor and the ECE Graduate Coordinator. Appendix B lists preapproved undergraduate courses that may appear on a graduate degree plan of study.

4. MINIMUM ACADEMIC STANDARDS

4.1 ECE Academic Standards

As a Master’s student in ECE, you are expected to maintain the following standards throughout your academic program:

- Maintain a POS grade point average, based on your currently approved POS, of at least 3.00 out of 4.00 over the courses on your plan of study, with no grade less than “C-;”
- Earn grades of “Satisfactory” in thesis research credit hours;
- Satisfactorily complete the EE 69400 seminar (if required) and the written English proficiency requirement within the first two semesters of your academic program;
- Make continuous and significant progress each semester toward completion of your degree requirements; and
- Complete all degree requirements and graduate within three years after entering the ECE graduate program (except for Online Track students).

You will be placed on ECE academic probation if you complete any semester or summer session with a deficiency in any of the above standards. Should you remain on ECE academic probation at the end of the succeeding semester or summer session, the ECE Graduate Coordinator may prohibit you from registering for further graduate study. Students concerned about their academic progress should schedule an appointment with the ECE Graduate Coordinator.

As noted above, the cumulative POS grade point average is calculated using the courses on your plan of study. However, transfer courses and graduate-level courses taken while an undergraduate student are not included in the computation (except for 4+1 Track students). In the case of a deficiency in the cumulative POS grade point average, courses may be repeated. If a course is repeated, only the most recent grade received will be used in computing the index, even if it is a lower grade.

University requirements state that no grade of “D” or “F” is allowed in a course on the plan of study. Any plan of study course in which a grade of “D” or “F” is received must be repeated and completed successfully; it cannot be dropped from the plan of study.
4.2 University Academic Standards

A. Academic Probation

- A student at Purdue University shall be placed on academic probation if his/her fall or spring semester or cumulative GPA at the end of any fall or spring semester is less than a 2.0.
- A student on academic probation shall be removed from that standing at the end of the first subsequent fall or spring semester in which he/she achieves semester and cumulative GPAs equal to or greater than 2.0.
- Any grade change due to a reporting error will result in a recalculation of the GPA and determination of probation standing.
- Academic standing will not be assessed in summer sessions.

B. Dropping of Students for Academic Deficiency

- A student on academic probation shall be dropped from the University at the close of any fall or spring semester in which his/her semester and cumulative GPA is less than a 2.0.
- Any grade change due to a reporting error will result in a recalculation of the GPA and determination of drop status.

C. Readmission

- A student who is academically dropped from the University for the first time is not eligible to enroll for at least one fall or spring semester. A student who is academically dropped for the second time is not eligible to enroll for at least one year.
- A student dropped by this rule must apply to the appropriate office or readmission committee for the Purdue campus of choice. A fee is assessed for processing the readmission application (Board of Trustees Minutes, June 5-6, 1970). Readmission is not guaranteed, but any student who gains readmission is readmitted on probation and is subject to stipulations in effect as a condition of readmission.
5 MASTER’S ADVISORY COMMITTEE

For students in the Thesis Track, your Master’s Advisory Committee shall consist of a minimum of three faculty members. The duties of this committee are to assist you in the preparation of the plan of study, advise you on research related to your Master’s thesis, and conduct examinations on the Master’s thesis. You must select a Major Professor who will serve as the Chair of the advisory committee. The Major Professor/student relationship must be a mutually acceptable one. With the advice and approval of your Major Professor, you will select the remaining members of your advisory committee.

For the following rules and guidelines on the composition and make-up of your advisory committee, tenure-track, courtesy, and research professors with regular graduate certification by West Lafayette ECE are to be regarded as members of the West Lafayette ECE faculty:

- The Major Professor must be a member of the West Lafayette ECE faculty and should be a member of the Primary Area that you have declared.
- If you have selected the thesis option and two advisors guide your research jointly, it may be advisable to have two co-chairs on your advisory committee rather than a single chair. At least one of these co-chairs must be a member of the West Lafayette ECE faculty and should be a member of the Primary Area that you have declared.
- At least one member of the advisory committee must be from your Primary Area, and another member should be from your ECE Related Area.
- A majority of your advisory committee must be composed of tenure-track professors with 50% or more appointment on the ECE faculty at the West Lafayette campus.
- A special member, defined as a person without regular graduate faculty certification, may be added as the fourth member of the committee. An up-to-date list of faculty members with regular graduate faculty certification and their faculty identifiers is included in the online plan of study program. Faculty members at Purdue, including regional campuses, would have regular graduate faculty certification. Faculty members from other universities, researchers from industry, and non-faculty research staff from Purdue have to be approved for special certification by the Graduate School for them to be members of the advisory committee. You may initiate a request for special certification in the ECE Graduate Office. A current and complete vita for the special member has to be submitted along with your request.

The advisory committee, as agreed upon by you and your Major Professor, shall be presented to the ECE Graduate Coordinator and the Dean of the Graduate School for approval and formal appointment. The Dean may appoint additional members if it
seems advisable. The advisory committee is established when the plan of study is approved. Changes to the advisory committee can be made online as a revision to your plan of study.

**Students in Project, Course-Only, Online, and 4+1 Tracks** must select a professor from the West Lafayette ECE faculty, who is in the student’s Primary Area, as their Faculty Advisor. The duties of the Faculty Advisor are to assist students in preparation of the plan of study and to approve plans of study. In some cases, such as Project or Online Track students, a Faculty Advisor may be assigned to students.

6 MASTER’S DEGREE PLAN OF STUDY

All Master’s students must file a plan of study (POS) before the end of their first semester. This helps to ensure a logical curriculum early in the program, sets a clear pathway toward completion of the student’s degree, and helps the school plan and monitor the overall ECE graduate program. For this reason, registration for subsequent semesters is not permitted until the plan of study has been filed. If necessary, changes can be made to the plan of study at a later date, subject to the restrictions cited in Subsection 6.2. The plan must be appropriate to meet the needs of the student’s chosen field as determined by the advisory committee and Faculty Advisor, and must be approved by the ECE Graduate Coordinator and the Graduate School.

6.1 Preparing Your Plan of Study

Suggested steps in preparing your plan of study are as follows:

a) Review the
   • Master’s coursework requirements in this handbook; (Also see Subsection 6.3 if undergraduate, transfer, or excess course credit is to be included on the plan of study.)
   • [Course information that is available online](#) to determine which courses are of most interest to you and will enable you to meet your degree requirements;
   • [ECE Course Advanced Planning List](#) and the University Schedule of Classes to determine the semester(s) in which the chosen courses will be offered;
   • [Graduate Areas and Faculty Interests supplement](#) to learn the specific interest areas of faculty members and to determine suitable candidates for your Major Professor, the person who will chair your advisory committee, or Faculty Advisor.

b) Consult with your Major Professor or Faculty Advisor to develop a plan of study.
c) Employ the online Electronic Plan of Study program (accessed through myPurdue) to compose a draft of your plan of study. Hardcopy instructions for using the online program are available from the ECE Graduate Office. Additional helpful information for filling out the plan of study can be found in Appendix D. Ensure that you have included courses that satisfy all requirements. You should print out a copy of your draft for use in discussions with members of your advisory committee.

d) Regarding the online Plan of Study program, enter all changes that resulted from your discussions with your Major Professor or Faculty Advisor. Submit your final plan electronically. Your plan of study will be automatically routed to the ECE Graduate Office for initial screening before being sent to your advisory committee or Faculty Advisor, the ECE Graduate Coordinator, and the Graduate School for approvals. If your plan fails to gain any of the required approvals, the reason for the rejection will be explained in an e-mail message. You can then make any required changes and submit the revised plan for approval.

You may check on the status of the approval process at any stage. You will be sent an e-mail message when approval has been obtained from the Graduate School. The required approvals usually takes several weeks.

6.2 Changing Your Plan of Study

It is recognized that as a student's program progresses, there may arise conditions that necessitate a change in the plan of study. Such changes, when based upon sound academic reasons, are encouraged. Some regulations have been found necessary in order to prevent abuses of this privilege. Specifically:

- A course may not be removed from the plan of study once a grade of “D” or lower has been received in a course.

- The deadline for submitting a request to the ECE Graduate Office to remove a course in which you are currently enrolled from your plan of study is the end of the ninth week of the semester, or the end of four and a half weeks in a summer session.

- Use the Electronic Plan of Study program to submit a request to change your plan of study. Any change in courses, advisory committee membership, or Faculty Advisor on your current plan of study requires the approval of your advisory committee or Faculty Advisor, and the ECE Graduate Coordinator.

If the ECE requirements for the Master's degree program are modified, there is no need for students to revise their previously approved plans of study to conform to the new rules. All approved plans of study remain valid. Students have the option to change their plan of study to conform to the new rules, but are not required to do so.
6.3 Undergraduate, Transfer, and Excess Course Credits

Undergraduate Credits
As noted in Subsection 3.2, only preapproved undergraduate credits may be included on a plan of study. A list of preapproved undergraduate courses is in Appendix B.

Transfer Credits
A maximum of six graduate-level credit hours earned at regional campuses of Purdue University or at an ABET-accredited university may be applied toward the Master’s degree and entered on the Master’s plan of study. However, regional campus courses or transfer courses may not be used to satisfy the core course requirement. All courses transferred must be graduate-level courses, must not have been used to meet the requirements for another degree unless part of the 4+1 Track, and must have been completed with a grade of “B” or better. Grades from transfer courses are not included in computing the grade point average.

Excess Course Credits
Up to twelve credit hours of graduate-level courses taken at the West Lafayette (WL) campus of Purdue before a student was admitted to the ECE Master’s program may be applied toward the Master’s degree and entered on the Master’s plan of study. Allowed courses include those taken:

a) as excess undergraduate-degree credit;
b) in non-degree status;
c) while seeking a degree in another Purdue department or school, if you subsequently request to transfer to ECE;
d) while seeking a degree in another Purdue department or school, if you subsequently request dual-degree status in ECE. For dual-degree students seeking a PhD in another Purdue department or school and a Master’s degree in ECE, the ECE Master’s degree plan of study may not contain any courses offered by or dual-listed with the student’s other department or school.
e) students working toward two Master’s degree at Purdue may double count up to nine credit hours on their plans of study.

Special Approval Requirements
Without exception, all transfer, and excess course credits used on the Master’s plan of study must be specially approved by your advisory committee or your Faculty Advisor, and by the ECE Graduate Coordinator. Steps to follow in requesting approval to include such credits on the Master’s plan of study are:

a) Add the course to your plan of study.
b) If a transfer course or a non-ECE course taken at Purdue, show a copy of the catalog description of the course to your advisory committee members and bring the catalog description to the ECE Graduate Office.
If you are transferring a course from another university, the ECE Graduate Office will also require an original transcript showing the grade earned and a statement from an official at the university where the course was taken certifying that the course was not used to fulfill requirements for any other degree.

7 REGISTRATION (excluding online tracks)

7.1 First Semester Registration

After consulting with your Faculty Advisor, prepare a tentative list of classes for the first semester, then report to the ECE Graduate Office, Room MSEE 140. Make sure to check the official Schedule of Classes for the coming semester to verify that your selected courses are being offered and that their meeting times do not conflict. Also note that:

- Graduation requirements include the satisfactory completion of one semester of ECE 69400 Graduate Seminar (except for Project and Online Tracks), and demonstration of proficiency in written English. It is strongly recommended that you complete these during your first or second semester.

The ECE Graduate Office staff will review and approve your course registration. They will provide your registration pin, so you can add the courses through myPurdue. Variable credit courses will be entered by the Graduate Office staff. You will receive a fee statement from the Bursar through myPurdue. Payment of this fee statement completes the registration process. Your registration will be cancelled if payment is not made by the deadline determined by the Registrar’s office. This deadline is posted on the Registrar’s Registration Calendar website.

7.2 Subsequent Semester Registrations

We encourage you to select your courses and to register as early as possible, since school decisions to cancel low-enrollment courses may affect your course options. Advanced registration for the Fall semester and Summer session begins around March 15 and ends respectively on the second Monday of Fall classes and the Friday before summer session begins. Registration for the Spring semester begins around October 15 and ends on the second Monday of Spring classes. Look for the announcement of specific registration dates as the cited dates approach.

All current ECE graduate students must register and pay their tuition and fees during the registration period. Note that late registration incurs a substantial penalty fee. If this is your final semester, complete the Candidate Survey in order to be registered as a candidate. If you are not certain that you will finish your degree requirements, you are still advised to register as a candidate. *If you are not on the candidates list, you will not graduate, even if you have completed all requirements.* After you have registered, check
myPurdue to verify that your registration is correct. Report any errors to the ECE Graduate Office.

Check with the ECE Graduate Office when registering for “Exam Only” or “Degree Only” to make certain that you qualify and have met all necessary requirements. Students in Thesis Track must have been registered for at least one credit hour of research in the previous semester. The deadline for “Exam Only” or “Degree Only” registration is one week before classes begin.

7.3 Academic Loads

To qualify for full-time student status in a Fall or Spring semester, you must satisfy one of the following criteria:

- Be registered for a minimum of 8 credit hours;
- Hold a research or teaching assistantship (1/4 time or greater) and be registered for at least 6 credit hours.

All international students must be full-time in order to maintain their visa status.

ECE Teaching Assistants may register for a maximum of 9 credit hours of non-thesis coursework.

As previously noted, the requirement for the Master's degree is 30 academic credit hours. Students are encouraged to register for the maximum allowable number of credit hours of courses and/or research each session to satisfy this requirement. Your Major Professor or Faculty Advisor will help you to determine the proper number of research credit hours.

7.4 Dropping and Adding Courses

To drop or add a course, use myPurdue. Changes in variable credit courses will require the Graduate Office to enter the changes. Subsequently, be sure to confirm that a dropped or added course has been officially recorded by checking myPurdue.

Courses dropped during the first two weeks of classes will not appear on your permanent record. Courses dropped during weeks 3 and 4 will be recorded as a “W” grade on your permanent record. Courses dropped during weeks 5 through 9 require the signature of both the instructor and the ECE Graduate Coordinator, the instructor must assign a grade of “W,” “WF,” or “WN.” The end of this period is the final deadline for withdrawing from a class. A “W” simply records the fact that the student withdrew after the second week of the semester. A “WF” records that the student was failing a graded course. “WF” grades are not included in computing the GPA. A “WN” records failing status in a course being taken Pass/No Pass. “W,” “WF,” and “WN” grades are recorded on your permanent record.
Courses added during weeks 2 through 4 require the approval and signature of the instructor and personnel in the ECE Graduate Office. Courses may be added during weeks 5 through 9, but only under extraordinary circumstances. Courses added after the 4th week require the approval and signature of the instructor and the ECE Graduate Coordinator, the head of the department where the course is offered for non-ECE courses.

Five-week courses will have different drop/add deadlines. The Office of the Registrar will provide a schedule of drop/add dates for all five-week courses.

8 MASTER’S THESIS AND FINAL EXAMINATION

For those in the Thesis Track, a thesis must be prepared according to a preset format and processed (revised, signatures obtained, distributed) following specified procedures. Likewise, the student must present and defend his/her work in a Final Examination. Appendix E outlines the steps involved in scheduling the Final examination. Information relative to the preparation and processing of the thesis is contained in Appendix F.

9 CONTINUATION FOR THE PH.D. DEGREE

To continue graduate work toward a doctorate degree after completion of the Master’s degree, a student must be admitted to the PhD program. Admission is based on evaluation of the student’s potential for success at the PhD level. The GPA of a typical successful applicant is 3.6 or higher. At a minimum, the student must have a GPA of 3.3 and a positive recommendation from his/her advisory committee for Thesis Track, or from the Faculty Advisor for other tracks. Application forms for admission to the PhD program are available in the ECE Graduate Office, and should be filed at the beginning of the final semester of the student’s Master’s program.

10 PETITIONS TO THE GRADUATE COMMITTEE

All graduate students have the right to petition for exceptions to any existing rule if they feel that the circumstances are sufficiently unusual to warrant special consideration. The first step is to request an appointment with the ECE Associate Head for Education to see if a resolution can be found at that level. If not, the student may file a petition with the ECE Graduate Committee. The petition is to be delivered in writing to the Chair of the Graduate Committee and is to contain the approval (or disapproval) of each member of the student’s advisory committee or Faculty Advisor.
Appendix A: MATHEMATICS REQUIREMENT

The following lists of courses have been approved for meeting the mathematics requirement.

Mathematics Courses
Courses numbered MA 51100 and above are acceptable with the exceptions listed below:

1. MA 51900 (Stat 51900) is not acceptable.
2. Only the AC and CS areas accept MA 50400.
3. Only the PE area accepts MA 51000.
4. The CS area does not allow MA 52700.
5. Only the CE area accepts STAT 51400.
6. Math Teacher related courses are not acceptable.

Computer Science Courses

CS 51400    Numerical Analysis
CS 51500    Numerical Analysis of Linear Systems
CS 52000    Computational Methods in Analysis
CS 61400    Numerical Solution of Ordinary Differential Equations
CS 61500    Numerical Solution of Partial Differential Equations

Statistics Courses

Stat 52800   Introduction to Mathematical Statistics
Stat 52900   Applied Decision Theory and Bayesian Statistics
Stat 53200   (MA 53200) Elements of Stochastic Processes
Stat 53800   (MA 53800) Probability Theory I
Stat 53900   (MA 53900) Probability Theory II
Stat 55300   Theory of Linear Models and Experimental Designs
Stat 55400   Multivariate Test Statistics
Stat 55500   Non-Parametric Statistics
Stat 57600   Introduction to Statistical Decision Theory
Stat 63800   (MA 63800) Stochastic Processes I
Stat 63900   (MA 63900) Stochastic Processes II
Stat 65700   Theory of Tests, Estimation and Decisions I
Stat 65800   Theory of Tests, Estimation and Decisions II
Stat 66700   Measure-Theoretic Statistics: Decision Theoretic and Classical
Stat 66800   Asymptotic Distribution Theory

Physics Courses

Phys 60000   Methods of Theoretical Physics I
Phys 60100   Methods of Theoretical Physics II

Please Note: Faculty-initiated requests for changes or exceptions to the above will be considered by the Graduate Committee after approval by the appropriate area. Student-initiated requests must follow the same procedure, with the additional first step of approval by the student’s Major Professor.
Appendix B: PREAPPROVED UNDERGRADUATE COURSES

ECE 43700 Computer Design and Prototyping
Appendix C: ENGLISH REQUIREMENT

Any one of the following methods may be used to fulfill the English requirement:

- Score a four or higher on the GRE Writing Assessment.
- Score 22 or higher on the Writing section of the Internet Based TOEFL.
- Score 6 or higher on the Writing section of the IELTS.
- Pass English 62100 offered at Purdue University with a grade of Pass/No Pass (“P”).
- Successfully completed a one-semester-long composition course equivalent to English 62100 or English 10600 or 10800 from an English-medium university with a grade of B or better. The ECE Graduate Coordinator may require you to provide a course description or additional information about the course.
Appendix D: FILLING OUT THE MASTER’S PLAN OF STUDY

The information provided below may be helpful when filling out your plan of study in myPurdue. Reference the MS student guide on the ECE webpage for detailed instructions “Electronic Plan of Study-How to.”

a) The space for indicating the Research Area may be filled in with a word or words descriptive of the thesis topic, e.g. Design of Robot Controllers. This is optional, and you may choose to leave it blank.

b) The space for indicating the “Concentration” is reserved for programs such as Computational Science and Engineering, Manufacturing Engineering, or Innovative Technologies. If you have not applied and been admitted to one of these programs, please leave this field blank.

c) Courses used to fulfill the departmental English requirement should not be included on the plan of study.

d) Pass/No pass grades are not permitted plan of study courses.

e) Thesis research, ECE 69800, and the ECE seminar, ECE 69400, should not be included on the plan of study.

f) For each course, use the appropriate link in the plan of study generator:
   - Current or past Purdue courses
   - Transfer/undergraduate excess courses. Refer to Excess Course Credits in Subsection 6.3
   - Future Purdue courses
   - Purdue combined degree courses (ONLY FOR STUDENTS IN THE 4+1 PROGRAM)

g) Indicate each of the courses on your plan of study as Primary Area or Related Area courses. The Primary Area must be one of the seven areas of the ECE graduate program listed in Table 1 found in Section 1.

h) All Master’s degrees require a specified number of hours of acceptable mathematics courses (6 for non-thesis option; 3 for thesis option). Indicate these as Related Area Courses on your plan of study. For a list of approved courses, refer to Appendix A.

i) Be sure that course titles on the Plan of Study match those on your transcripts, especially on experimental courses (ECE 59500 and ECE 69500), Advanced ECE Projects (ECE 69600), and Directed Reading in ECE (ECE 69700).

j) Courses that are offered by more than one department must appear with the number and title under which they were taken.

k) Do not mark that a “B” or better is required for any course on your plan of study. This is not a requirement for you for any course.
l) Courses transferred from other schools should be listed on the plan of study with the same title and number as on the transcript from the school at which they were taken. Do not use the equivalent number from a Purdue course.

m) The plan of study program will query you for the area of each of the members of your Advisory Committee ("Advisor in Area Of"). Even though the program tells you this is optional, ECE requires that you fill this in and abbreviate (e.g. AC, CE, etc.). You will find a listing of the ECE faculty, including the primary research area or areas for each, on the ECE Graduate Program web page.

n) Submit the plan of study as a "draft" for review by the Plan of Study Coordinator. Once approved as a draft the Plan of Study Coordinator will instruct you to submit the plan of study as "final" (outstanding).
Appendix E: MASTER’S FINAL EXAMINATION INFORMATION

The Final Examination is given after the thesis and all other requirements have been completed. The Final Exam covers primarily the thesis and related topics. The Final Examination Committee is typically the student’s Advisory Committee. However, the Dean of the Graduate School reserves the right to appoint additional Committee members.

Schedule your Final Examination with your Major Professor, your Advisory Committee, and the ECE Graduate Office at least 3 weeks prior to the proposed date of the exam. The Final Examination must be completed before the semester deadline (approximately one week before the last day of classes) as indicated by the Graduate School, but we strongly recommend you do not wait until this late date. Check the Graduate School website or in the ECE Graduate Office for the specific deadline. Those who are registered for “Exam Only” their Final Examination must be completed by the 8th week of classes (6th week of summer session).

Reserve a room for your Final Examination:
- Go to https://engineering.purdue.edu/ECN/Resources/Tools/RAT/Entities/ECE
- Select the room you wish to schedule and check the availability of that room
- After confirming the availability of the room, select "Request Reservation"
- Click on Elisheba Van Winkle under the list of managers--you will then be able to submit the request online
- Should the system not allow you to make a request, send the request by email to vanwinke@purdue.edu
- You will receive a confirmation email once the room has been reserved
- On the day of the exam, if the room is locked, see an area secretary for a key. If the area secretary is not available, see the ECE Graduate Office.

A request to schedule the Final Examination is two steps:
1. An electronic request to schedule the exam (Form 8) should be submitted through myPurdue, under the academic tab and the Plan of Study Generator, three weeks prior to the exam date. This request requires approvals from the Graduate Office, the chair of your advisory committee, and the Graduate School.
2. Send an abstract (no more than 250 words) of the thesis research clearly defining the problem and its significance, to the ECE Graduate Office (goldenm@purdue.edu).

Please be aware that late requests to schedule your Final Examination do not allow sufficient time to process your request and adequately publicize your examination date. Any requests to schedule a Final Examination less than three weeks in advance must be approved by the ECE Graduate Coordinator, and will be approved only in exceptional circumstances.

Your examination is to be held on the West Lafayette Purdue Campus. You and all members of your Advisory Committee are expected to be physically present. The time and location of the Final Examination will be posted on the ECE Graduate website.
University regulations permit visitors to attend the Final Examination. Such visitors are permitted to ask questions of the candidate, after having been recognized by the Major Professor, but they may not be present while the Final Examination Committee deliberates on its decision.

The Examining Committee will report the results of the Final Examination through the Graduate School Web Database. No more than one dissenting vote is acceptable in certifying the candidate to receive the MSECE degree. If the examination is unsatisfactory, at least one semester or summer session must elapse before the Final Examination is repeated.

**Graduate School Policy: Thesis Deposit Time Limit**

Effective Fall 2020, students are required to deposit their theses and dissertations within three consecutive sessions of receiving a decision of PASS on their Final Exam (including the session in which the Final Exam was passed). The thesis or dissertation must be deposited no later than the CAND 99100 Deposit Deadline of the third consecutive session for full consideration of the sought degree. For example, a student who passes the Final Exam in a fall session has through the CAND 99100 Deposit Deadline of the following summer to deposit. To uphold the integrity of the defended research, if a student is unable to deposit their thesis or dissertation within three sessions, they must re-defend their research and deposit within the session they receive the decision of PASS on the second Final Exam to be conferred the degree.
Appendix F: THESIS PREPARATION AND PROCESSING

For those pursuing the thesis option, a thesis must be prepared according to a preset format and processed (revised, signatures obtained, distributed) following specified procedures. Likewise, the student must present and defend his/her work in a Final Examination. Information is presented here relative to the preparation and processing of the thesis and the steps involved in scheduling the Final examination.

Before beginning to write your thesis, you are strongly advised to review the information on the Graduate School Thesis/Dissertation Office website.

The Purdue Graduate School has a standardized web environment for creating your thesis/dissertation. They have chosen the Overleaf web service and worked with them to provide a Purdue compliant template/environment. You are highly encouraged to look at and consider using Overleaf (LaTeX) for your thesis/dissertation.

You should use the templates (LaTeX or MS Word) that the Graduate School provides.

LaTeX
Word (requires Word 2016): use the PC or MAC link for "IEEE for Engineering disciplines"

When you have completed the thesis preparation, receive your Major Professor’s approval to proceed and schedule the Final Examination as outlined in Appendix F. Copies of the thesis are to be distributed to the Advisory Committee members at least two weeks in advance of the examination.

On the day of the Final Examination, your Major Professor and committee members will submit the “Report of the Final Examination” through the Graduate School Web Database. This should be completed as soon as possible following the exam.

You will create an electronic Thesis/Dissertation Acceptance form (Form 9) to begin the thesis deposit through myPurdue, under the academic tab and the Plan of Study Generator. Once you have completed the electronic form and submitted it, the Chair and committee members will be asked to approve the thesis. Be sure to discuss with your Major Professor whether your thesis should be confidential prior to submitting the request or if there will be a delay in the publication.

Your Major Professor will certify that he/she has used “iThenticate” software to check the document for plagiarism in the electronic Thesis Acceptance Form. They will also confirm confidentiality or delayed publication of the thesis “Embargo” if you have marked these.

Embargo and Confidentiality

- Students should consider an embargo over confidentiality in all cases. An embargo is commonly used when applying for patents, pending publications, or when proprietary rights are involved.
- Confidentiality should only be used with ITAR/Export controlled or confidential sponsored information is included in the thesis. Indefinite confidentiality can only be requested when there is contract information on file with Sponsored Program
Services. All indefinite requests will be subject to approval by the SPS office. All confidentiality requests will also be reviewed by Thesis Office staff to ensure this program is being utilized properly.

After all of your committee members have signed off on the Thesis Acceptance Form (Form 9), schedule an appointment with the School Head via his/her administrative assistant in the Main Office for an **Exit Interview**. This interview is expected prior to the Head submitting the final electronic signature on your Thesis Acceptance Form. When you meet with the Head, please bring a copy of your abstract.

For more detailed steps or questions about the on-line thesis deposit process refer to the [Graduate School Thesis website](#). The Graduate School Thesis Office contact information is 765.494.3231 or [thesishelp@purdue.edu](mailto:thesishelp@purdue.edu)

Having obtained all required signatures and submitted the electronic version to HammerRR:
- Give one copy to your Major Professor.
- Give a copy to any member of your examining committee who wants on