SUPPLEMENTARY RULES FOR GRADUATE STUDENTS

IN ELECTRICAL ENGINEERING OR COMPUTER ENGINEERING

(In addition to the rules of the Graduate College)

(Last revised: 03/2024)

This document together with the Graduate College Handbook summarizes information, rules and regulations governing graduate study in the Department of Electrical and Computer Engineering (ECpE). Students pursuing a graduate program in the Department are strongly urged to be conversant with these rules.

ECpE Graduate Program Learning Goals:

The ECpE Graduate program should produce graduates who fulfill the following:
1. Demonstrate mastery of knowledge and scholarly literature in their fields of study.
2. Understand ethical principles and conduct responsible research
3. Effectively communicate and disseminate their technical contributions.
4. Students pursuing theses/dissertations shall also demonstrate ability to conduct state-of-the-art research and expand the knowledge base in their fields of study

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1 Graduate Programs

1.1 Degree programs

The Department of Electrical and Computer Engineering (ECpE) offers the following graduate degree programs:

(a) Master of Science (MS)

The Master of Science degree program is offered with two options:

- Master of Science with Thesis
- Master of Science with Creative Component (without thesis)

(b) Master of Engineering (MEng)

Our Master of Engineering programs are based on coursework credits only (no thesis or creative component is required). Off-campus students can pursue this option by taking courses offered via our online streaming media education.

(c) Doctor of Philosophy (Ph.D.)

1.2 Concurrent Bachelor/Master Programs

The Department of Electrical and Computer Engineering (ECpE) provides concurrent undergraduate/graduate degree programs that allow well-qualified students to be admitted to either the electrical engineering or computer engineering graduate program while still working on their undergraduate degree in computer, electrical or software engineering during their senior year. Students can double count up to 6 credits of coursework towards both degree programs, allowing them to finish their master's degree faster. Two concurrent Bachelor/Master programs are offered:

- Concurrent Bachelor of Science and Master of Science (BS/MS)
- Concurrent Bachelor of Science and Master of Engineering (BS/MEng)

1.3 Graduate Certificates

The department offers online graduate certificates in a number of areas:

- Certificate in Computer Networking
- Certificate in Embedded Systems
- Certificate in Power Systems Engineering
- Certificate in Software Systems

Students may also be interested in the online graduate certificates offered through interdepartmental graduate programs:

- Certificate in Human Computer Interaction

- Certificate in Information Assurance
- Certificate in Nondestructive Evaluation

1.4 Majors and Academic Areas

Students can major in Electrical Engineering (EE) or Computer Engineering (CprE). Students can pursue graduate research in the following academic areas:

- Bioengineering (EE and CprE)
- Communications and signal processing (EE)
- Computing and networking systems (CprE)
- Electric power and energy systems (EE)
- Electromagnetic, microwave, and nondestructive evaluation (EE)
- Microelectronics and photonics (EE)
- Secure and reliable computing (information assurance) (CprE)
- Software systems (CprE)
- Systems and controls (EE)
- VLSI (EE and CprE)

These academic areas are also known as areas of specialization.

1.5 Interdepartmental Programs

Student may select the ECpE department as their home department to pursue graduate degrees in one of the following interdepartmental programs:

- Bioinformatics and Computational Biology
- Information Assurance
- Human-Computer Interaction.

2 Departmental Admission Policy

2.1 Admission Criteria for Study toward the Master's Degree

The Department of Electrical and Computer Engineering offers three master's options:

- Master of Science with Thesis (MS) —normally expected preparation for Ph.D. study
- Master of Science without Thesis (MS) — includes a creative component
- Master of Engineering (MEng) — course work only, and primarily offered for distance

students

A student with the appropriate qualifications may apply for admission into the Master's programs for these options. Students pursuing the non-thesis and Master of Engineering are unlikely to receive financial aid. The student may change the degree option with the approval of the Director of Graduate Education (DOGE).

All applications are evaluated on the basis of academic record, letters of recommendation, GRE, and statement of purpose. The general policy is to admit only those applicants judged to have the highest potential for success as graduate students consistent with the department's academic and financial resources:

(a) Graduates of domestic engineering schools

Applicants with undergraduate degrees from ABET accredited electrical or computer engineering curricula who are in the upper half of their graduating class are eligible. Applicants are required to submit a recent GRE test result. GRE scores for Master of Engineering will be waived for applicants with an undergraduate GPA of 3.0 or above or two years of industrial experience.

Graduates of non-accredited electrical and computer engineering curricula may be considered for restricted admission if they meet all other requirements and show outstanding potential for graduate study. Graduates of accredited electrical or computer engineering curricula that fail to meet some admission requirement but otherwise show outstanding potential may also be considered for restricted admission.

(b) Graduates of international engineering schools

Applicants with undergraduate degrees in electrical or computer engineering from foreign universities are required to submit recent TOEFL and GRE test results. They are expected to have a TOEFL score of at least 88 Internet based (230 computer based or 570 paper based) or a IELTS score of at least 6.5, and a GRE Quantitative test score of at least 155 and be in the upper quarter of their graduating class to be considered for admission.

(c) Other applicants

Applicants with undergraduate degrees in engineering disciplines other than electrical or computer engineering or applicants with non-engineering degrees in some closely related sciences who meet all requirements in (a) or (b) above may be considered for provisional admission.

(d) Concurrent enrollment for undergraduate students

Students currently enrolled in either the undergraduate Computer Engineering, Electrical Engineering or Software Engineering programs at ISU and classified as a senior may be eligible to apply for a Concurrent BS/MS or Concurrent BS/MEng degree program. For concurrent BS/MS admission, the student must have a cumulative GPA of 3.3 or better. For concurrent BS/MEng admission, the student must have a cumulative GPA of 3.0 or better, and be within 18 credits of completing requirements for their bachelor's degree. Application procedures are available on the ECpE website.

2.2 Admission Criteria for Study toward the Ph.D. Degree

ECpE offers a traditional doctoral program for a student with a master's degree in engineering or a closely related science. Students with a master's degree from a foreign engineering school shall submit GRE and TOEFL test results as stipulated in 2.1(b). Graduates from domestic schools are required to submit GRE scores. Admission will be either full or provisional depending on the applicant's background. Applicants will be evaluated on the basis of their master's program, their potential for doctoral level research, and the availability of a major professor in their area of specialization in addition to the previous criteria for admission to the master's program. Only the most outstanding applicants are admitted.

Also, students with good credentials with a Bachelor of Science degree are encouraged to apply for direct entry to the Ph.D. degree program. A direct entry Ph.D. student will typically take less time to a Ph.D. compared to someone who enters MS first.

Graduates of the department's master's degree program wishing to work towards a Ph.D. degree must apply for readmission to the doctoral program and should consult ECpE Student Services for information on the procedures to be followed. The request should be made to the Director of Graduate Education.

2.3 Admissions Criteria for Graduate Certificate

Entry into the Graduate Certificate Program requires a bachelor's degree in science or engineering from a four-year college, with a GPA of 3.0 or higher.

2.4 Upper-Half Rule

It is the department policy that undergraduates must be in the upper-half of their class in order to enroll in 500-level courses.

2.5 Restricted to Full Admission

Transfer from restricted admission to full admission requires either a GPA of 3.2 or better on 9 hours of graduate credit or a GPA of 3.0 or better on 18 hours, and the recommendation of the student's major professor.

2.6 Provisional to Full Admission

Transfer from provisional to full admission should occur at the earliest possible time after the student satisfactorily remedies the deficiencies that resulted in provisional admission. Students should complete the *Request to Transfer from Provisional to Full Admission* form, obtain major professor's signature, and bring the form to the ECpE Student Services Office for approval.

The DOGE, in consultation with the major professor, can set the course requirements for students accepted in the program with background deficiencies. As an example, students can be asked to successfully complete, have equivalent material, complete subsequent courses or test out of a number of ECpE courses from the following set of courses:

For Electrical engineering majors: E E 201, E E 230, E E 224, E E 303, E E 311, E E 322 and CPR E 281.

For Computer engineering majors: E E 230, CPR E 281, CPR E 288, CPR E 308, CPR E 310, CPR E 315 (or COM S 311), CPR E 381 in addition to at least one course in high level programming.

3 Departmental Policy on Advising Graduate Students

3.1 Advising On-Campus Ph.D. and Master of Science

(a) All students will be admitted with a temporary advisor – the Director of Graduate Education (DOGE). The advisor will make recommendations on courses to be taken and may also help the student in initiating a research program. It is the student's responsibility to keep the advisor fully informed of plans to secure a major professor.

(b) Students admitted for a Master of Science degree are required to secure a Program of Study committee and file a Program of Study no later than the end of the 2nd semester of enrollment. Students admitted for a Ph.D. degree should secure a Program of Study committee by the end of their 2nd semester and file a Program of Study no later than the end of their 4th semester. Students failing to have an approved Program of Study by the specified time will have a registration hold placed for future terms.

(c) Each Program of Study committee formed for an MS student must contain at least one tenured or tenure-track faculty member in ECpE. Each Program of Study Committee for an MS student, thesis option, must consist of at least three (3) members. Each Program of Study Committee for an MS student, non-thesis option, must consist of at least one (1) member.

(d) Each Program of Study committee formed for a Ph.D. student must contain at least three tenured or tenure-track faculty members in ECpE, including the major professor. Each Program of Study Committee for a Ph.D. student must consist of at least five (5) members.

(e) A faculty member with adjunct or courtesy appointment may serve as major professor. The Department Chair will make this decision for each courtesy or adjunct faculty at time of appointment or renewal. The factors to consider in making this decision include prior graduate advising experience and the degree of overlap between the department and the faculty member's research.

(f) Students are expected to discuss their registration plans with their major professor/advisor. Course registration numbers for research 599, 699 and independent study 595X sections can be obtained from ECpE Student Services.

3.2 Advising On-Campus Master of Engineering

(a) All Master of Engineering (MEng) students will be advised by the Director of Graduate Education (DOGE).

(b) Students must have a Committee Appointment and a Program of Study approved by the Graduate College one semester prior to graduation.

3.3 Advising Off-Campus Graduate Students

(a) All off-campus master students will be advised by the Director of Graduate Education (DOGE). The advisor will make recommendations on courses to be taken and may also help the student decide on thesis, non-thesis, or a course-based degree option.

- If the student wishes to write a creative component or thesis, the student will choose a major professor and will reach an early agreement on the details of the final project or thesis.
- Students must have a Committee Appointment and a Program of Study approved by the Graduate College one semester prior to graduation.

4 Supplemental Program of Study (POS) Requirements

The following requirements are to be met for Master's and Ph.D. degrees and Graduate Certificates in ECpE.

4.1 Master of Science with Thesis Option

(a) Requires 30 credits. No fewer than 22 of these credits shall be earned at ISU.
(b) Requires a minimum of three (3) and a maximum of nine (9) research/thesis credits.
(c) Eighteen (18) credits must be course work from within ECpE: twelve (12) credits must be from a single academic area (depth requirement), and six (6) credits must be from outside this academic area (breadth requirement).
(d) Up to 8 transfer credits are allowed on the POS. Transfer credits must have a grade of B or better. Research credits cannot be transferred.
(e) A maximum of three (3) credits can be taken from either of E E 595X or CPR E 595X.
(f) With POS committee approval, undergraduate courses may be used on the POS. No 100 or 200 level courses can be used. Up to nine (9) credits of 400 level courses, or three (3) credits of non-ECpE 300 level courses and six (6) credits of 400 level courses may be used. Non-ECpE 300 level courses with a significant overlap with CPRE/EE core courses will not be allowed.
(g) Students are expected to perform original and creative research and report their research results in a thesis.
(h) Each student is required to attend at least two (2) Ph.D. or MS defenses during her/his tenure as requirements for graduation. This rule applies to on-campus students only, but off-campus students are encouraged to attend Ph.D. and M.S. defenses.
(i) Each student is required to attend at least two (2) departmental seminars per semester. This rule applies to on-campus students only.
(j) Each student needs to fulfill the publication requirement of at least one (1) journal or peer-reviewed conference paper submission.
(k) Requires the satisfactory completion of a final oral examination.

4.2 Master of Science with Non-thesis Option (Creative Component)

A student who elects not to write a thesis shall be required to demonstrate ability to do independent work in one of two ways: (1) by studying literature on a topic of current interest and presenting a written and oral report on that topic, or (2) by completing an assigned task of measurements, design, construction, or computation, and presenting a written and oral report of the results. The students shall seek the approval of the major professor in choosing the creative component work. This work will be conducted under E E 599 or Cpr E 599 and graded either as Satisfactory or Unsatisfactory.

The written report should demonstrate substantial evidence of creative endeavor. Additional requirements are as follows:

(a) Requires 30 credits. No fewer than 22 of these credits shall be earned at ISU.
(b) Requires a minimum of two (2) and a maximum of three (3) creative component credits.
(c) Eighteen (18) credits must be course work from within ECpE: twelve (12) credits must be from a single academic area (depth requirement), and six (6) credits must be from outside this academic area (breadth requirement).
(d) Up to 8 transfer credits are allowed on the POS. Transfer credits must have a grade of B or better. Research credits cannot be transferred.
(e) A maximum of three (3) credits can be taken from either of E E 595X or CPR E 595X.
(f) With POS committee approval, undergraduate courses may be used on the POS. No 100 or 200 level courses can be used. Up to nine (9) credits of 400 level courses, or three (3) credits of non-ECpE 300 level courses and six (6) credits of 400 level courses may be used. Non-ECpE 300 level courses with a significant overlap with CPRE/EE core courses will not be allowed.
(g) Each student is required to attend at least two (2) Ph.D. or MS defenses during her/his tenure as requirements for graduation. This rule applies to on-campus students only, but off-campus students are encouraged to attend Ph.D. and M.S. defenses.
(h) Each student is required to attend at least two (2) departmental seminars per semester. This rule applies to on-campus students only.
(i) Requires the satisfactory completion of a final oral examination and a report summarizing the work.

4.3 Master of Engineering

(a) Requires 30 course credits. No fewer than 22 of these credits shall be earned at ISU.
(b) Eighteen (18) credits must be course work from within ECpE.
(c) Up to 8 transfer credits are allowed on the POS. Transfer credits must have a grade of B or better. Research credits cannot be transferred.
(d) A maximum of three (3) credits can be taken from either of E E 595X or CPR E 595X.
(e) With DOGE approval, undergraduate courses may be used on the POS. No 100 or 200 level courses can be used. Up to nine (9) credits of 400 level courses, or three (3) credits of non-ECpE 300 level courses and six (6) credits of 400 level courses may be used. Non-ECpE 300 level courses with a significant overlap with CPRE/EE core courses will not be allowed.

4.4 Ph.D.

(a) Requires 72 graduate credits of which no fewer than 36 graduate credits must be from ISU. A minimum of three (3) must be dissertation/research credits.
(b) For the qualifying process, a student must have taken two (2) courses from the Academic Area Courses list, and two (2) from the General Skills Courses list.
(c) A minimum of twenty-four (24) must be course work credits, that must be approved by both the major professor and the DOGE.
(d) Eighteen (18) credits must be course work from within ECpE: twelve (12) credits must be from a single academic area (depth requirement), and six (6) credits must be from outside this academic area (breadth requirement).
(e) In addition, six (6) more credits of course work are required from the skills courses of the academic area.

(f) Up to 36 transfer credits are allowed on the POS. Transfer credits must have a grade of B or better. Research credits cannot be transferred.
(g) At least twelve (12) course credits must be taken at ISU from the combined set of the student's primary research area and relevant skills courses. (This rule will be applied to students admitted in Fall 2018 and beyond.)
(h) A maximum of six (6) credits can be taken from either of E E 595X or CPR E 595X.
(i) With POS committee approval, undergraduate courses may be used on the POS. No 100 or 200 level courses can be used. Up to nine (9) credits of 400 level courses, or three (3) credits of non-ECpE 300 level courses and six (6) credits of 400 level courses may be used. Non-ECpE 300 level courses with a significant overlap with CPRE/EE core courses will not be allowed.
(j) Each student is required to attend at least five (5) Ph.D. defenses during her/his tenure as requirements for graduation. This rule applies to on-campus students only, but off-campus students are encouraged to attend Ph.D. defenses.
(k) Each student is required to attend at least two (2) departmental seminars per semester. This rule applies to on-campus students only.
(l) Each student is required to make at least one (1) presentation at the graduate student seminar during her/his tenure.
(m) Each student needs to fulfill the publication requirement of at least two (2) journal or peer-reviewed conference papers published or accepted for publication, as approved by the major professor.
(n) Requires the satisfactory completion of a final oral examination.

4.5 Additional Information and Requirement for Concurrent Bachelor/Master Programs

(a) Up to one (1) semester of concurrent enrollment is allowed (the semester in which the student has both undergraduate and graduate standing).

(b) Up to six (6) credits of graduate level coursework taken while an undergraduate during the semester of concurrent enrollment may be double counted toward both their undergraduate and graduate program of study.

(c) Up to six (6) credits of graduate level coursework taken while an undergraduate that will NOT be counted toward their undergraduate program of study may be transferred; the coursework must have a grade of B or better.

(d) Student will take at least three (3) credits of graduate level courses during concurrent enrollment.

4.6 Requirements for Graduate Certificates

(a) To obtain the Computer Networking Graduate Certificate, students must complete 12 total credit hours of courses, including a 3-credit hour required course and 9 credit hours of elective courses.

(b) To obtain the Embedded Systems Graduate Certificate, students must complete 12 total credit hours of courses, including 9 credit hours of required courses and a 3-credit hour elective course.

(c) To obtain a Power Systems Graduate Certificate, students must complete 12 total credit hours

of required courses.

(d) To obtain a Software Systems Graduate Certificate, students must complete 12 total credit hours of courses, including a 3-credit hour required course, and 9 credit hours of elective courses.

4.7 Minor and Co-Major Requirements

For students in other departments, a master's level minor in Electrical Engineering or Computer Engineering shall consist of 9 credits minimum (10 credits typical) of courses acceptable for minor or major graduate credit. A Ph.D. minor shall consist of 12 credits minimum, of which at least 6 must be at the 500 level or higher.

A joint or co-major in Electrical Engineering or Computer Engineering at the MS or Ph.D. level requires at least 12 credit hours (500 level courses) in Electrical Engineering or Computer Engineering. Students seeking a co-major must have a co-major professor from the ECpE department. A joint or co-major in Electrical Engineering or Computer Engineering at the Ph.D. level requires two members from the Electrical and Computer Engineering Department on the student's committee with one of them being a faculty member of the Electrical and Computer Engineering Department with a primary appointment and a full or associate member of the graduate faculty. One of them shall serve as co-chair of the committee.

4.8 Designation of Area of Specialization

Computer Engineering and Electrical Engineering MS and Ph.D. candidates are not required to specify an area of specialization on their Program of Study (POS), but they are encouraged to include it.

5 Ph.D. Examinations

All students working towards a Ph.D. must complete the Qualifying Process and pass the preliminary examination prior to taking the Final Oral Examination. The requirements, listed in order, are:

(a) Qualifying Process

- Course Work Requirement
- Problem Solving Component

(b) Preliminary Examination

A student is admitted to candidacy for the Ph.D. degree after he/she passes the Preliminary Examination.

5.1 Qualifying Process

The process for this certification is to ensure that the graduate student has acquired academic area knowledge and general research methodology skills and has applied them to solving a problem in the area of study. The certification process consists of a course work requirement and a problem solving component.

(a) Course Work Requirement

Take two Academic Area courses and two General Skills courses with an overall GPA of 3.5 or higher on these courses. Each individual course grade must be B+ or higher. These courses will be listed on the *Ph.D. Qualifying Exam – Request Form*.

(b) Problem Solving Component

Work with the advisor or prospective advisor on a research problem. It is expected that the advisor guides this research. The product will be a written report, an oral presentation of this report, and an oral examination following the presentation.

5.1.1 Interdisciplinary Qualifying Process

In special cases, an interdisciplinary qualifying process, involving an additional area, may be allowed with the permission of the DOGE. In such cases:

(a) At most one course may be from outside the main area of the qualifying examination. This course must to be approved by the DOGE.

(b) The qualifying examination committee may be formed by the major professor, and may include faculty members from outside the area. The committee must be approved by the DOGE

5.2 Additional Information Regarding the Qualifying Process

(a) Completion Timeline

All the requirements must be completed by the fourth (4^{th}) semester for post-BS students or the third (3^{rd}) semester for post-MS students.

(b) Course Guidelines

The course guidelines are minimal guidelines. Students may take additional Academic Area and General Skills courses in consultation with their advisors.

(c) Examination

- *Examining Committee Constitution:* The area committee designates the examiners. Each examining committee must consist of at least three (3) members.

- *Oral Examination:* The oral examination will emphasize the declared two Academic Area courses, two General Skills courses, the written report, and the presentation. The focus should be on establishing connections between the Academic Area courses and General Skills courses and the problem solution rather than on their search product itself. A desirable outcome at this stage may be a conference or journal submission of the work.

5.3 Academic Area and General Skills Courses

The Academic Area courses are offered by ECpE. The General Skills courses may be offered by other departments like statistics, mathematics, computer science, or physics.

5.4 Preliminary Examination Format and Requirements

The objective of the Preliminary Examination is to evaluate and test the graduate student's knowledge of the subject area and review his/her research plans. Two weeks prior to the preliminary examination, the student must provide each POS Committee member with a dossier, including a resume, copies of published reports and/or papers, and a written prospectus of the proposed research. The research prospectus should be typically 20 double-spaced typed pages, and should include:

(a) a concise statement of the problem,

(b) a review of relevant literature,

(c) a well-formulated work plan detailing the approach to the problem, and

(d) the expected contribution.

The POS Committee, as part of the preliminary examination, may also elect to have the student (1) review and critique appropriate technical publications, (2) provide an oral presentation of his/her research plan, or (3) face any test deemed appropriate by the POS Committee. The POS Committee may, as a consequence of the examination, decide to (1) pass the student and admit his/her candidacy, (2) have the student retake the examination, or (3) terminate the student's Ph.D. program.

6 Thesis or Dissertation Quality

The Department of Electrical and Computer Engineering maintains strict standards regarding thesis quality. The Director of Graduate Education in consultation with the Graduate Committee has the right to reject theses that do not meet these standards. As stated in the Iowa State University Graduate College Handbook:

A master's thesis is a scholarly composition that demonstrates the ability of the author to do independent and creative work. It explores in some depth a problem or issue related to the major field of study. Although considerable variations in format and style are acceptable, precise expression, logical construction, and meticulous attention to detail are essential.

A doctoral dissertation must demonstrate conclusively the ability of the author to conceive, design, conduct, and interpret independent, original, and creative research. It must attempt to describe significant original contributions to the advancement of knowledge and must demonstrate the ability to organize, analyze, and interpret data.

7 Completion Requirements

Each degree candidate is responsible for initiating the Request for Final Examination by submitting to the ECpE Student Services Office the date, time, and place of the final examination at least three (3) weeks in advance of that date. ECpE Student Services will distribute this information to the Electrical and Computer Engineering faculty. In addition,

(a) Every student who completes a thesis or dissertation shall submit an abstract, not exceeding one page in length, to the ECpE Student Services Office. ECpE Student Services will distribute the abstract electronically to the Electrical and Computer Engineering faculty and graduate students.

(b) Records of final exam and seminar attendance are maintained in the ECpE Student Services Office to verify the attendance requirement of two (2) final oral examinations for MS level students or five (5) for Ph.D. level students, two (2) departmental seminars each semester for MS and Ph.D. level students, and one (1) graduate student seminar presentation for Ph.D. level students.

(c) *Publication Requirements for MS (thesis) and Ph.D. Students* is a form on ECpE departmental website and needs to be submitted prior to final submission of the thesis or dissertation. The Supplemental Program of Study Requirements section states the MS (thesis) and Ph.D. publication requirements.

The ECpE Student Services Office will not forward for signature approval to the Director of Graduate Studies the "Graduate Student Approval Slip for Graduation" until the above requirements have been met.

All thesis and dissertation defenses are open to the public and shall include an opportunity for questions from the public.

8 Dismissal, Change of Major Professor and Grievance Procedures

8.1 Dismissal

Students may be dismissed from the Computer Engineering or Electrical Engineering degree programs for any of the following reasons:

Failure to progress satisfactorily in his/her degree program, including a lack of research progress, a lack of aptitude or a failure to maintain satisfactory academic standing, as defined by the Iowa State University Graduate College Handbook.

8.2 Reassignment of Major Professor

MS and PhD students must work with a major professor to progress through the program. On occasion, students and/or major professors make a decision to terminate their working relationship. In this case, every effort will be made by the program to assist the student in finding a new major professor. However, the ultimate responsibility for this rests with the student.

8.3 Grievance Procedures

The ECpE department is committed to properly addressing graduate student grievances and following the grievance procedures in Section 9.5 of the Graduate College Handbook.

(a) Grievances about Grades and Instruction (see Section 9.5.1 of the Graduate College Handbook): If the ECpE department chair chooses to respond to a graduate student grievance by referring it to a grievance committee, the chair will form an ad hoc grievance committee consisting of department faculty. The grievance committee will investigate and report its findings to the chair.

(b) Grievances Related to Scholarly and Professional Competence (see section 9.5.2 of the Graduate College Handbook): If the graduate student decides after the initial discussions to

submit the grievance to a grievance committee, then the DOGE will work with the department chair to appoint an ad hoc grievance committee. The committee composition and procedures will follow the Graduate College Handbook.

9 Ethics

All students in the Department of Electrical and Computer Engineering are expected to follow the Institute of Electrical and Electronics Engineers (IEEE) Code of Ethics, as outlined below.

IEEE Code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members, and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Approved by the IEEE Board of Directors, February 2019.

10 Internships

Approval and Guidelines for Internships is a departmental form to be completed when students have secured an internship position during the graduate program. International students will also need to complete the form *Curricular Practical Training for F-1 Students* located at the International Students and Scholars website. The appropriate forms require approval from the adviser and the Manager of Student Services. All students finishing internships are required to write a one-page reflection on competencies acquired through the experience.

11 Leave and Conference Travel Policies

11.1 Absence Request for Personal or Professional Leave

Research Assistants (RAs) and Teaching Assistants (TAs) who want to leave campus during semester breaks and/or for professional development/meetings must seek approval from their major professors prior to leave using the *ECpE Graduate Student Absence Request Form*.

11.2 Graduate College Professional Advancement Grant (PAG)

Graduate students who take professional development leave are encouraged to complete a *Request for Professional Advancement Grant (PAG) Form* and submit directly to the Graduate College, 1137 Pearson Hall. The Graduate College requires students to submit requests for Professional Advancement Grants at least two weeks prior to departure. For additional information, visit the webpage.

11.3 Travel Reimbursement

It is imperative for graduate students to keep all expense receipts, including detailed meals, lodging, and transportation receipts, to ensure full reimbursement. Reimbursements requests must be completed using the Workday system within 1 month from the last date of travel. Reimbursements received after the deadline will be denied.

Appendix A: ECpE Course Lists

See Part II – Course Lists http://www.ece.iastate.edu/academics/graduate-guidelines/

Appendix B: List of Forms Referred to in the Document

- *Request to Transfer from Provisional to Full Admission*
- *Ph.D. Qualifying Exam – Request Form*
- *Publication Requirements for MS (thesis) and Ph.D. Students*
- *Approval and Guidelines for Internships*
- *Curricular Practical Training for F-1*
- *Students ECpE Graduate Student Absence Request Form*
- *Request for Professional Advancement Grant (PAG) Form*