ELECTRICAL AND COMPUTER ENGINEERING, PHD

INTRODUCTION TO COE AND ECE

PhD students in the College of Engineering (COE) are among an elite group of people who have chosen to advance their education at one of the premier engineering colleges in the country. The academic programs in UW–Madison's College of Engineering are highly ranked, and our faculty are widely recognized as leaders in their fields. Here you will find a community in which you will excel. You will find faculty, staff, and peer students who are supportive and committed to your success. You will find rigorous coursework that will prepare you to achieve your goals. You will experience an environment highly conducive to collaboration—and you will meet faculty with a broad range of research interests and connections both on campus and around the world.

The Department of Electrical and Computer Engineering has a long tradition of excellence in educating, mentoring, and inspiring future leaders; conducting research that is of vital importance to society; and serving Wisconsin, our nation, and the world through professional pursuits.

Our Vision is to improve the world through bold research, educational excellence, effective technology transfer, and impactful service.

Our Mission is to foster a diverse and inclusive community that advances the frontiers of engineering, disseminates discoveries and inventions, and prepares students to make the world a better place for all.

PHD IN ELECTRICAL AND COMPUTER ENGINEERING

The ECE PhD degree program emphasizes creative and original approaches to solving problems through research activity. Research in the department spans several cross-cutting themes: data science, healthcare, mobile computing, security and infrastructure resilience, sensors and sensing, and sustainability. Specific areas of research expertise are: applied electromagnetics and acoustics; communications, networks, privacy and security; solid state electronics and quantum technologies; machine learning, signal processing and information theory; computer systems and architecture; plasma science and fusion energy; energy systems; optics and photonics, optimization and control. Students have the opportunity to pursue and perform PhD research within interdisciplinary cooperative projects.

The ECE doctoral program provides in-depth training in research and allows students multiple opportunities to publish, including the student's final dissertation. The ECE PhD program typically requires five years of study beyond the bachelor's degree, although the exact time to degree completion varies depending on research progress.

Students with a bachelor's degree may apply directly to the ECE PhD program. PhD students also have the opportunity to earn a MS-ECE: Research degree along the way to their PhD.

For more information on this specific degree plan, please visit the ECE website (https://engineering.wisc.edu/programs/degrees/electrical-and-computer-engineering-phd/).

ADMISSIONS

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. ***Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s).*** Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

Requirements	Detail
Fall Deadline	December 15
Spring Deadline	This program does not admit in the spring.
Summer Deadline	This program does not admit in the summer.
GRE (Graduate Record Examinations)	Not required but may be considered if available.
English Proficiency Test	Every applicant whose native language is not English, or whose undergraduate instruction was not exclusively in English, must provide an English proficiency test score earned within two years of the anticipated term of enrollment. Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

ADMISSIONS PROCESS

A submitted online application (https://grad.wisc.edu/apply/) is required, consisting of:

- Resume/CV;
- Statement of purpose; see the suggested guidelines (https://grad.wisc.edu/apply/prepare/) provided by the Graduate School
- The supplemental application section that identifies their research interest area
- Most up to date unofficial transcript(s) from all previous higher education institutions, regardless of whether or not a degree was earned (official transcripts are requested of only recommended applicants); international academic records must be in the original language accompanied by an official English translation.
- Payment of the one-time application fee of $75.00, plus the $6.00 international processing fee if applicable; this fee is non-refundable. It can be paid by credit card (MasterCard or Visa).
- Test scores and three letters of recommendation as detailed above.

Applications must be entirely complete by the deadline, including test scores and letters of recommendation. Note that it is highly advised

to take the GRE and English proficiency tests well in advance of the application deadline in order to ensure time for receiving and processing of the scores. Do not mail any paper copies of application materials, except IELTS scores. They will not be reviewed.

Information for international students, including proof of funding and visa information, can be found on the International Student Services website (https://iss.wisc.edu/students/admissions/).

By Wisconsin state law, the application fee can only be waived or deferred under the conditions outlined by the Graduate School (https://grad.wisc.edu/apply/fee-grant/).

The department welcomes applications from scientific, engineering, and mathematical disciplines other than Electrical and Computer Engineering. Applicants with a bachelor's degree may apply directly to the PhD program.

English Competency for Non-Native English Speakers

Effective written and oral communication is vital for a successful academic career. International students whose native language is not English will be required to take the English as a Second Language Assessment Test (ESLAT), offered by the English as a Second Language (ESL) Program.

The ESLAT must be taken as soon as the student arrives at the university. The test is offered in the Fall and Spring during the week before the beginning of instruction. The ESL home page (https://esl.wisc.edu/international-students/placement/) has more information.

Based on ESLAT performance, specific ESL courses may be recommended. These courses must be taken and passed within 12 months of the ESLAT. Otherwise, the student will not be permitted to register during the third semester after entering the graduate program. Any ESL courses numbered 300 or above can be counted towards graduate degree requirements but not toward E C E course requirements. Completion of ESLAT and recommended courses is also a requirement for graduation of an international student whose native language is not English.

Students are exempt from taking the ESLAT if:

- English is the exclusive language of instruction at the undergraduate institution; or
- they have earned a degree from a regionally accredited US college or university not more than 5 years prior to the anticipated semester of enrollment; or
- they have completed at least two full-time semesters of graded course work, exclusive of ESL courses, in a US college or university, or at an institution outside the US where English is the exclusive language of instruction, not more than 5 years prior to the anticipated semester of enrollment.

REENTRY ADMISSIONS

If you were previously enrolled as a graduate student at UW–Madison, but have had a break in enrollment for at least one fall or spring semester, you will need to apply to resume your studies.

For applicants previously enrolled in a graduate program other than Electrical and Computer Engineering, you must complete a **new** online application, including all materials, for admission.

For applicants previously enrolled in Electrical and Computer Engineering as a graduate student, you must complete a **reentry** application. Reentry applicants may apply for the fall term with a deadline of June 1.

In order to apply as a reentry applicant, you must:

- Complete the online application (https://grad.wisc.edu/apply/), including the personal information section, program and term selection, and supplementary application;
- Provide the following documents to the Electrical and Computer Engineering Graduate Admissions Team (ecegradadmission@engr.wisc.edu):
  - CV/Resume
  - Statement of Purpose
  - Any new unofficial transcripts from previous higher education institutions
  - Three letters of recommendation if the break in enrollment equals or is greater than four semesters (fall, spring). Letters of recommendation should be emailed directly from the recommender.

CURRENT GRADUATE STUDENT ADMISSIONS

Students currently enrolled as a graduate student at UW-Madison, whether in or other than Electrical and Computer Engineering, wishing to apply to this degree program should contact the Electrical and Computer Engineering Graduate Admissions Team (ecegradadmission@engr.wisc.edu) to inquire about the process and respective deadlines several months in advance of the anticipated enrollment term. Current students may apply to change or add programs for any term (fall, spring, or summer).

QUESTIONS

Review the frequently asked questions answered by the Graduate School here (https://grad.wisc.edu/apply/).

If you have any admissions questions, please do not hesitate to contact the Electrical and Computer Engineering Graduate Admissions Team at ecegradadmission@engr.wisc.edu**.**

FUNDING

FUNDING
GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

PhD students entering the program in Fall 2019 or later will receive a financial support package at the time of admission that may include some combination of research and teaching assistantships, internal and external fellowships, and/or other sources.

Research Assistantships (RA)

Students should contact professors in their area of interest. Professors decide whom they will appoint on their research grants.

Teaching Assistantships (TA) and Grader Positions

Current graduate students may apply for teaching assistantships or hourly grader positions via the ECE TA/Grader Portal (https://apps.aims.wisc.edu/tagrader/default.aspx) (must have a NetID to

access). If you are interested in applying for TA or grader position in a department other than ECE, please contact the respective department to ask about their own application process. Students currently holding a research assistant or fellowship position that are interested in teaching assistant positions should discuss options with their research advisor(s) before applying.

International students who are non-native English speakers are required to pass the SPEAK Test (https://esl.wisc.edu/ita-training/speak/) through the English as a Second Language Program on campus. Students wishing to take the SPEAK Test should contact the ECE TA Coordinator via e-mail to register for the exam.

Project Assistantships (PA)

There are project assistant opportunities on campus for various purposes and departments and offices. Often announcements of openings are posted on TA/PA bulletin boards in Engineering Hall and on the UW Job Center webpage (http://www.jobcenter.wisc.edu/). You may also contact individual faculty members to inquire about possible opportunities.

Fellowships

Information concerning fellowships is sent to graduate students via email from the department, faculty, and/or the Graduate School.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS
MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement	Detail
Minimum Credit Requirement	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	26 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).
Other Grade Requirements	1. A grade of B or better in any graduate course is acceptable. A grade of S in E C E 790 Master's Research or Thesis, E C E 890 Pre-Dissertator's Research and E C E 990 Research or Thesis is acceptable.

2. A grade of BC in an E C E course is acceptable, provided the total cumulative GPA for graduate E C E courses is greater than or equal to 3.00.
3. A grade of C or lower in an E C E course is not acceptable.
4. A grade of BC or lower in an independent study course (E C E 699 Advanced Independent Study or E C E 999 Advanced Independent Study) or a grade of U in Research or Thesis (E C E 790, E C E 890 or E C E 990) is not acceptable.
5. A grade of BC or C in a non-E C E course is acceptable only if approved by the Graduate Committee.

If students are unable to complete coursework by the end of the term, an instructor may enter a temporary grade of I for incomplete.

If students have not resolved all Incompletes by the end of the next fall or spring term in which they are enrolled, they are considered in bad standing by the Graduate School; however, the instructor may impose an earlier deadline. If not resolved within this time period, the grade is considered unsatisfactory and will remain an "I" unless changed to a final grade by the instructor. An unresolved I grade lapses to a grade of PI after five years. Students may be placed on probation or suspended from the Graduate School for failing to complete the work and receive a final grade in a timely fashion. Outstanding Incompletes must be resolved before a degree is granted.

Assessments and Examinations	As soon as a student has passed all the requirements for the PhD degree (except completion of the dissertation), the student is classified as a Dissertator. Specifically, the student must: 1. Pass the Research Readiness Assessment; 2. Receive Advanced Graduate Standing; 3. Complete at least 32 graduate credits at UW-Madison; 4. Satisfy the ECE Course Requirements; 5. Satisfy the Breadth Requirement; 6. Satisfy the English Competency Requirement; 7. Satisfy the E C E Seminar Requirements; 8. Pass the Preliminary Examination.
Language Requirements	Non-native speakers of English who enroll in the PhD program must take the ESLAT test on arrival at the university and then take any recommended courses based on the exam results. In addition, if a student's advisor believes that his or her technical writing ability needs improvement, the student may be required to undertake remedial work.
Graduate School Breadth Requirements	All doctoral students are required to complete a doctoral minor or graduate/professional certificate. Refer to the Graduate School: Breadth Requirement in Doctoral Training policy: https://policy.wisc.edu/library/UW-1200 (https://policy.wisc.edu/library/UW-1200/). Students are expected to consult with their advisors concerning appropriate breadth requirements.

REQUIRED COURSES

Code	Title	Credits
E C E 610	Seminar in Electrical and Computer Engineering	1
E C E 611	Introduction to Doctoral Research in Electrical & Computer Engineering	2
E C E Coursework with the "Grad 50%"attribute [1]		**12**
including at least 9 credits of E C E courses numbered 700 or above		
Additional coursework with advisor approval		**36**
Electrical and Computer Engineering (E C E) courses must be numbered 400 or above. Non-Electrical and Computer Engineering (E C E) courses must be numbered 300 or above.		
Total Credits		**51**

[1]   Research, independent study, coop, or seminar credits (e.g., E C E 610, E C E 611, E C E 699, E C E 702, E C E 790, E C E 890, E C E 990, E C E 999, E C E/N E/PHYSICS 922) may not be used to satisfy this requirement.

Electrical and Computer Engineering courses used to satisfy minor requirements may not be used to satisfy this requirement.

Seminar Requirement
All on-campus Electrical and Computer Engineering graduate students must register for E C E 610 Seminar in Electrical and Computer Engineering during their first semester of graduate studies. PhD degree seeking students must take 1 credit of E C E 610 in the fall semester of which they are entering the program and 2 credits of E C E 611 Introduction

to Doctoral Research in Electrical & Computer Engineering in the following spring semester. This requirement must be done in the PhD student's first year.

The purpose of E C E 610 is to prepare students for success in graduate school and expose them to areas within Electrical and Computer Engineering as well as related fields outside of Electrical and Computer Engineering, such as biotechnology, physics, computer science, mathematics, or business. Electrical and Computer Engineering is very interdisciplinary in nature, and so it is important for students to be aware of advanced research and development in areas other than their own.

The purpose of E C E 611 is to emphasize research experiences and methodologies to prepare students to pursue PhD research work.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR–SPECIFIC POLICIES
PRIOR COURSEWORK
Graduate Credits Earned at Other Institutions
Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Undergraduate Credits Earned at Other Institutions or UW–Madison
With program approval, up to 7 credits from UW–Madison coursework numbered 400 or above can transfer toward the minimum graduate degree credit requirement, or E C E (http://guide.wisc.edu/courses/e_c_e/) courses numbered 700 or above can be counted toward the minimum graduate coursework (50%) requirement. No credits can be counted toward the minimum graduate residence credit requirement. Credits earned ten or more years prior to admission to a doctoral degree are not allowed to satisfy requirements.

With program approval, up to 7 credits from other institutions numbered 300 or above outside of E C E or numbered 400 above within E C E can transfer toward the minimum graduate degree credit requirement. Transfer credits from other institutions must be equivalent to the rigor of UW-Madison courses numbered 300 and above. Prior coursework transfers will be assessed on a case–by–case basis by the ECE MS or PhD Committee. These credits cannot count toward the 50% graduate coursework minimum nor the minimum graduate residence credit requirement. To request evaluation of prior coursework, please contact the Graduate Student Services Coordinator. Credits earned ten or more years prior to admission to a doctoral degree are not allowed to satisfy requirements.

Credits Earned as a Professional Student at UW–Madison (Law, Medicine, Pharmacy, and Veterinary careers)
Refer to the Graduate School: Transfer Credits for Prior Coursework (https://policy.wisc.edu/library/UW-1216/) policy.

Credits Earned as a University Special Student at UW–Madison

With program approval, students are allowed to transfer up to 9 credits of coursework numbered 400 or above taken as a University Special student toward the minimum graduate degree credit requirement. These credits are not allowed to count toward the 50% graduate coursework minimum unless taken in coursework numbered 700 or above or are taken to meet the requirements of a capstone certificate and has the "Grad 50%" attribute. Credits earned ten or more years prior to admission to a doctoral degree are not allowed to satisfy requirements.

PROBATION

Refer to the Graduate School: Probation (https://policy.wisc.edu/library/UW-1217/) policy.

The status of a student can be one of three options:

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status.
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full time) the student may be dismissed from the program or allowed to continue for 1 additional semester based on advisor appeal to the Graduate School.

ADVISOR / COMMITTEE

A student's ECE academic advisor serves a dual role: first, to assist the student in acquiring the highest level possible of knowledge and competence in their field; and second, to chair the committee that will determine whether the student has performed acceptably at each of their degree milestones. Academic advisors play a role in tracking the student's progress toward degree completion, assisting with course selection and academic planning, and helping students identify possible research mentors, committee members, and opportunities.

An oral examination is required in defense of the completed PhD dissertation. The examination is administered by a committee appointed by the Dean of the Graduate School, upon recommendation by the student's research advisor. The committee must consist of four or more members of the graduate faculty and is chaired by the student's advisor. At least one committee member must be from outside the Electrical and Computer Engineering department and field, and at least two committee members must be from within the Electrical and Computer Engineering Department. Students must designate at least three members of their committee to be readers of their dissertation. A student must provide copies of their PhD thesis to defense committee members at least two weeks prior to the scheduled defense.

The final examination cannot be taken until all other requirements for the PhD have been satisfied, including being eligible to receive dissertator status. The student's record must be cleared of all Incomplete and Progress "P" grades (E C E 990 grades can be cleared after the student has successfully defended their dissertation).

CREDITS PER TERM ALLOWED

15 credits

TIME LIMITS

The Research Readiness Assessment must be taken no later than the third semester of study. The Preliminary Examination must be taken no later than 3 semesters after the student has received Advanced Graduate Standing.

The final defense is expected to be held within five years of entering the Electrical and Computer Engineering PhD program. Students that are unable to hold their final defense within five years must submit a progress report to the Electrical and Computer Engineering Graduate Committee as described in the most current Electrical and Computer Engineering Graduate Student Handbook (https://www.engr.wisc.edu/department/electrical-computer-engineering/academics/ece-graduate-student-handbooks/).

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may be required to take another preliminary examination and be admitted to candidacy a second time.

Refer to the Graduate School: Time Limits (https://policy.wisc.edu/library/UW-1221/) policy.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
    - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
- Dean of Students Office (https://doso.students.wisc.edu/) (for all students to seek grievance assistance and support)
- Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

ECE Grievance Procedures
Exceptions, Extensions, and Appeals

Petitions for exceptions to academic requirements are considered on an individual case-by-case basis and granted exceptions do not constitute a precedent. Deviations from established policies are strongly discouraged, but certain extenuating academic and personal circumstances may warrant exceptions. Petitions for course exceptions/substitutions, exceptions to the Satisfactory Progress Expectations (academic or conduct), or other policy exceptions shall be directed to the ECE Graduate Committee, and in some circumstances to the appropriate program coordinator. The following procedures apply to all petitions:

1. Student must first consult with their advisor(s).

2. Student is advised to also consult with the ECE Graduate Student Services Coordinator for additional advice.

3. Student and advisor(s) must both submit written documentation requesting and explaining the petition to the ECE Graduate Student Services Coordinator:

4. Identify the specific requirement/rule/expectation pertinent to the petition;

5. Explain the rationale for petition and why it should be granted;

6. Advisor(s) must support the petition.

The ECE Graduate Student Services Coordinator will forward the petition to the ECE Graduate Committee and appropriate program coordinator for adjudication. Student and advisor(s) will be notified of the ECE Graduate Committee's decision and the note will be placed in the student's file.

Please note that petitions for exceptions to clearly-defined program rules are rarely approved by the ECE Graduate Committee.

Progress Requirements

The ECE Graduate Committee may grant extensions to normal progress requirements in circumstances such as childbirth, adoption, significant responsibilities with respect to elder or dependent care obligations, disability or chronic illness, or circumstances beyond one's personal control. Petitions for extensions should provide evidence of plans and ability to return to conformance with program expectations and to acceptably complete the program. Extensions beyond one semester will be granted only in the event of highly extraordinary circumstances. Extensions will be recorded with a note of explanation placed in the student's file.

Students desiring confidentiality of their circumstances should consult with the Associate Chair for Graduate Studies.

Appeal of Previous Decisions

Appeals of ECE Graduate Committee decisions may be pursued regarding any academic issue, including exceptions to program requirements, progress requirements, AGS and Qualifying Exam decisions. Appeals will only be considered if the student provides new information that was not available to the ECE Graduate Committee at the time the original decision was made. Appeals must be submitted within one month of the date the student was notified of the ECE Graduate Committee action being appealed.

If the student believes their appeal was not appropriately handled or resolved by the ECE Department, the student may further appeal to the College of Engineering by contacting the Assistant Dean for Graduate Affairs. Such appeals must be submitted within one month of the date the student was notified of the ECE Graduate Committee denial.

Grievances

The ECE Department, College of Engineering, and University of Wisconsin offer multiple avenues to resolve unfair or inappropriate treatment by faculty, staff, or another student. This includes hostile and intimidating research group climate, authorship disputes, unreasonable expectations, and disrespectful behavior. The manner in which the grievance is handled depends on the nature of the issue and specific concerns of the aggrieved student. Graduate Assistants in TA, PA and/or RA appointments may utilize the Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/) (GAPP) grievance process to resolve employment-related issues. Examples of matters appropriate for the GAPP grievance process include allegations of excessive work hours, violations of sick days or vacation policies, or disputes regarding the assignment of duties.

In some cases the best approach is for the aggrieved student to discuss their concern directly with the person responsible for the objectionable action.

If the student is uncomfortable making direct contact with the other individual or desires a confidential consultation about their concern, they may contact the ECE Associate Chair for Graduate Studies, the ECE Grievance Advisor, or the College of Engineering Assistant Dean for Graduate Affairs. These individuals work to resolve the concern while being sensitive to student confidentiality.

Change of advisor

Students who believe they are in a research environment that fails to meet ECE and College of Engineering standards for climate and culture should contact the ECE Associate Chair for Graduate Studies, the ECE Grievance Advisor, or the College of Engineering Assistant Dean for Graduate Affairs for additional consultation. They will work with the student to explore alternate advising arrangements and ensure continuity of financial support should the student need to leave the research group. Note that immigration status is NOT tied to a specific research advisor.

Formal Written Complaint Process

Issues that are not resolved to the student's satisfaction may be pursued at the student's discretion by submitting a written complaint to the ECE Grievance Advisor. The steps described below are based on the Definition and Procedure section of the Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/) (GAPP) Grievance Procedure.

Step One: The grievant must file a written statement with the ECE Grievance Advisor specifying the grievant's name, a clear and concise statement of the grievance and the issue(s) involved, the date(s) the incident or violation took place and the specific departmental, college, or university policies involved, and the relief sought. The grievance shall be signed and dated by the grievant(s) and representative (if any).

Within twenty (20) days of receipt of the written grievance, the ECE Grievance Advisor will meet with the grievant and their representative (if chosen) to hear the grievance and will return a written answer to the grievant and their representative (if chosen) no later than ten (10) days after this meeting. This answer will include a copy of the grievance procedure appeal process timeline, a list of resources and relevant contact information for future steps.

Step Two: If the decision in Step One is not accepted by the grievant, the grievant shall have 10 days from receipt of the answer in Step One to file

an appeal with the College of Engineering Assistant Dean for Graduate Affairs. The Assistant Dean for Graduate Affairs will meet with the grievant and their representative (if chosen) within twenty (20) days from receipt of the appeal of Step One and attempt to resolve the grievance. The Assistant Dean for Graduate Affairs will provide the grievant and their representative (if chosen) with a written response to the grievance no later than ten (10) days after this meeting.

Step Three: If the decision in Step Two is not accepted by the grievant, the grievant shall have 10 days from the receipt of the answer in Step Two to file an appeal with the Graduate School as described in Grievances and Appeals (https://grad.wisc.edu/documents/grievances-and-appeals/).

OTHER

The department endeavors to fund PhD students through research assistantships, teaching assistantships, project assistantships, and fellowships. All applications are automatically considered for department funding.

PROFESSIONAL DEVELOPMENT

PROFESSIONAL DEVELOPMENT
GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING RESOURCES

UW–Madison, the College of Engineering, and ECE have an abundance of professional development opportunities for students to take advantage of in order to better prepare themselves for internships and job positions during and following their education. First of all, the ECE Department strongly encourages students to utilize the Graduate School's professional development resources (https://grad.wisc.edu/professional-development/). Engineering Career Services (ECS) (http://ecs.wisc.edu) hosts multiple career fairs each semester where students can directly interact with prospective employers, schedule interviews, and find internships and full time jobs. ECS also maintains job listings and hosts a variety of professional development workshops each semester. The ECE Department provides unique opportunities throughout the year for students to attend and participate in various lectures, workshops, and trainings. The ECE Graduate Student Association (GSA) organizes professional development opportunities for fellow students. Students are made aware of events and opportunities via email and other communications.

LEARNING OUTCOMES

LEARNING OUTCOMES

1. Demonstrate an extraordinary, deep understanding of mathematical, scientific, and engineering principles in the field.
2. Demonstrate an ability to formulate, analyze, and independently solve advanced engineering problems.
3. Apply the relevant scientific and technological advancements, techniques, and engineering tools to address these problems.
4. Recognize and apply principles of ethical and professional conduct.
5. Demonstrate an ability to synthesize knowledge from a subset of the biological, physical, and/or social sciences to help frame problems critical to the future of their discipline.
6. Demonstrate an ability to conduct original research and communicate it to their peers.

PEOPLE

PEOPLE
PROFESSORS

Susan Hagness (Chair)
Nader Behdad
Daniel Botez
Azadeh Davoodi (Associate Chair for Undergraduate Studies)
Kassem Fawaz (Associate Chair for Research)
John A. Gubner (Associate Chair for Operations)
Yu Hen Hu
Hongrui Jiang (Associate Chair for Graduate Studies)
Irena Knezevic
Bernard Lesieutre
Mikko Lipasti
Zhenqiang Ma
Luke J. Mawst
Robert Nowak
Parameswaran Ramanathan
Bulent Sarlioglu
William A. Sethares
Daniel van der Weide
Giri Venkataramanan
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