



JOHNS HOPKINS
UNIVERSITY

Department of Electrical and Computer Engineering

Graduate Student Manual

PhD Program

2022-2023

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1. WELCOME

Welcome to the Department of Electrical and Computer Engineering! This manual can help you plan a program of graduate study leading to the Doctor of Philosophy (Ph.D.) degree. Its pages are devoted to policies, rules, procedures (in italics), and suggestions about our program with the intention of providing useful information about these programs. However, uncertainty is implicit in any endeavor, and this document is not phrased to professional legal standards. Remaining questions should be addressed to your advisor, the Director of Graduate Studies, or the Department Head.

Having noted what this manual is about, it is important to emphasize that the most important aspect of graduate study is seldom mentioned. As a student entering our program, you are beginning a joint enterprise with other students and the faculty that, at its best, is stimulating, enjoyable, and rewarding for all concerned. Advanced study, innovative fundamental research, and publication of results are the goals. The mechanics documented here are in place to help you achieve these goals.

2. Ph.D. DEGREE PROGRAM REQUIREMENTS

The Ph.D. requirements apply to all part-time and full-time students in the program. Time limits, however, are stated in the context of full-time graduate study. Time limits for part-time programs must be individually arranged with the student’s advisor and the Director of Graduate Studies. The Ph.D. degree certifies that the holder has demonstrated research capability. Accordingly, the Ph.D. requirements are used as checkpoints leading the student through this research experience. Because students tend to spend more than ample time on the path to research, several requirements prescribe time limitations. The requirements stated below include university-wide requirements for the Ph.D. Note that all students who wish to be admitted to our graduate program leading to a Ph.D. must have a bachelor’s degree or its equivalent upon entry.

2.1. Summary of Degree Requirements

To fulfill the requirements for the Ph.D. degree in ECE, students must complete the following three primary checkpoints as well as satisfy the University and Whiting School Ph.D. residency and coursework requirements and satisfy the ECE Department course load requirements.

1. Pass the Departmental Qualifying Examination and select a Research Advisor.
2. Submit a Preliminary Research Proposal and pass the Graduate Board Oral Examination.
3. Submit a Dissertation and successfully complete a Public Dissertation Defense.

2.2. University and Whiting School Degree Requirements

Visit <https://e-catalogue.jhu.edu/arts-sciences/full-time-residential-programs/graduate-policies/academic-policies/#text> for information on school-wide requirements. These include:

- Two semesters of full-time course registration, also called “residency”.
- Course registration every semester.

- Completion of responsible conduct of research and academic ethics courses. There are two introductory courses and tutorials that graduate students must take, see details below.

2.2.1. Residency Requirement

To fulfill the residency requirements for the Ph.D. degree, the student must complete a minimum of two consecutive semesters of registration as a full-time, resident graduate student. To qualify as a resident student, the student must be present on campus and working toward fulfilling the requirements for the degree. Complete information is available on the JHU Graduate Board's website at <http://homewoodgrad.jhu.edu/academics/graduate-board/>

2.2.2. Course Registration and Credits

All Whiting School of Engineering graduate courses are assigned credit hours. Note that:

- To maintain full-time status, WSE graduate students must be enrolled in at least 9 credits in each semester. Students enrolled in fewer than 9 credits per semester will not meet the full-time enrollment requirement, which may affect residency requirements for all and visa concerns for international students.
 - Seminars – 1 credit
 - WSE courses, both undergraduate and graduate – 3 or 4 credits
 - 520.801/520.802 Ph.D. Dissertation Research – 3-20 credits
 - NOTE:
 - Audited courses do not count toward a full-time credit load.
 - While Krieger School of Arts and Sciences' (KSAS) graduate-level courses do not have credits listed in SIS, they are recognized as 3-4 credits toward the full-time credit load. KSAS graduate-level courses are 400 level and above.
- All full-time Ph.D. students must satisfactorily complete at least nine credits per semester (fall/spring) until they have a Research Advisor. This should be three courses with 3-4 credits each. Until the Departmental Examination is passed, no more than one Independent Study course per faculty member can be counted toward these three courses.
- PhD students are expected to register for 20 credits of Dissertation Research 520.801/520.802 once they pass the DQE.
- All graduate students on JHU payroll should register for EN.520.803 Summer Graduate Research for 9 credits during each summer.

Visit the Whiting School's Frequently Asked Questions page at <http://homewoodgrad.jhu.edu/academics/wse-graduate-credit-hours/> for more information.

Students may wish to register in another division, like the Engineering for Professionals program or in any of Hopkins's eight other schools. Such students should complete the Interdivisional Registration (IDR) Form. Visit <https://studentaffairs.jhu.edu/registrar/students/interdivisional-registration/> for information and a link to the IDR form. Once completed, the form can be submitted via SEAM's online form here: <https://support.sis.jhu.edu/case-home>.

2.2.3. Responsible Conduct of Research Course

All Ph.D. graduate students will be required to take the in-person “Responsible Conduct of Research” training course (AS.360.625). Doctoral students are expected to complete the course by the end of the first year but have until the start of the fourth semester to meet this requirement. Failure to comply with this requirement could result in a loss of funding.

Note for Ph.D. students who completed the in-person course previously as an undergraduate or master’s student at Johns Hopkins: Verification of course completion can be re-used, with two exceptions: (1) for those doctoral students on formal NIH training grants or fellowships, the in-person course must be completed at each level funding is received (i.e., the course must be re-taken as a doctoral student); and (2) for those doctoral students on NSF funding who have previously completed the in-person course as a JHU undergraduate or master’s student, the online course can be used to satisfy this requirement as a Ph.D. student.

Information is available at <http://engineering.jhu.edu/wse-research/resources-policies-forms/responsible-conduct-of-research>. Successful completion of this course must be verified before a student’s diploma is issued.

2.2.4. Academic Ethics

As a graduate student, you will be automatically enrolled in the online tutorial 500.603 Academic Ethics, which teaches academic and ethical responsibilities. This approximately 30-minute tutorial must be completed in the first eight weeks of the student’s first semester. The Whiting School of Engineering will notify new students when the course is available.

2.2.5. Non-Resident Status and Tuition

NON-RESIDENT TUITION

Non-resident students pay only 10% of the full-time tuition but have all the privileges of full-time students including access to campus services and faculty advising.

NON-RESIDENT RESTRICTIONS

Non-resident students cannot enroll in courses; they also lose the Whiting School’s financial support for health insurance.

Non-resident students are automatically enrolled in health insurance, but can waive the insurance, if eligible for waiver by proof of enrollment in another health insurance plan with similar coverage.

To maintain non-resident status, students will have to register for non-resident status each semester and provide a letter explaining their progress toward the degree’s completion.

HOW TO OBTAIN NON-RESIDENT STATUS

- Contact one of the Senior Academic Program Coordinators to confirm eligibility for non-resident status.
- Complete the Non-Resident Status for Whiting School form. This form will be sent by the Senior Academic Program Coordinator to the Whiting School Academic Affairs office for review and approval.
- If the Non-Resident request is denied, a student may be eligible for part-time status.

RESOURCES

- Graduate Residency and Registration Policies:
<http://homewoodgrad.jhu.edu/academics/graduate-board/new-grad-board-residency-page/>

- Graduate Board Forms, which include the Non-Resident Application and the Non-Resident Annual Report: <http://homewoodgrad.jhu.edu/academics/graduate-board/policies-and-forms/>
- Whiting School of Engineering Policy on Health Insurance page: <http://engineering.jhu.edu/graduate-studies/academic-policies-procedures-graduate/> (then select the Health Insurance tab)

2.3. ECE Department Course Load Requirement

All full-time students must satisfactorily complete at least nine credits per semester until they pass the departmental qualifying exam and have a Research Advisor. Additionally, students must enroll in the ECE Departmental Seminar (520.895) during this time. Until the qualifying exam is passed, no more than one Independent Study course per faculty member can be counted toward these three courses.

A course is satisfactorily completed if a grade from A+ to C- or a "P" is obtained. No more than one C+, C, or C- and/or "P/S" grade can be counted toward the degree requirements.

2.4. Departmental Qualifying Examination and Research Advisor Selection

Students must pass the Departmental Qualifying Examination before the beginning of the fourth semester of graduate study.

A student can take the Departmental Qualifying Examination only if enrolled in the Ph.D. program. The student must select and complete the examinations posed by three examiners eligible to supervise doctoral dissertations in the Department of Electrical and Computer Engineering (see lists in §A.1.), of which at least two must be tenure-track ECE faculty (listed in §A.1.1.). The respective examiners grade completed examinations, but it is the ECE Department faculty as a whole that makes a collective decision on whether the student has adequately fulfilled the Departmental Qualifying Examination requirement. This decision involves consideration of the student's cumulative academic performance in the graduate program, consultation with the anticipated doctoral research advisor, and the performance on the examination. The Departmental Qualifying Examination cannot be taken more than twice. The Fall and Spring qualifying examinations are given over a period of seven days immediately preceding the start of classes.

Students must select a Research Advisor immediately upon passing the Departmental Qualifying Examination requirement.

A student cannot have a Research Advisor before passing the Departmental Qualifying Examination. Prior to the Qualifying Exam the student has an Academic Advisor. Upon passing the Qualifying Exam the student must immediately identify a Research Advisor that is willing and able to supervise and support their doctoral research. The Research Advisor sets requirements for the remainder of the program. These may include a teaching requirement, particular coursework, a reading program, or a preliminary research project. As the research advisor must be identified immediately upon passing the Qualifying Exam, students should identify and consult with a Research Advisor in advance of taking the exam and confirm their support. Once the student selects a research advisor, the student must obtain a research advisor form from the Academic Program Administrator, have their advisor sign the form and then return it to the Administrator.

Either the student or the research advisor can discontinue the relationship for any reason. When a Student-Research Advisor relationship is discontinued, a new Research Advisor must be selected

within two months. If a student is without a research advisor the student is typically placed on probation.

2.5. Research Proposal and Graduate Board Oral Exam

Students must develop a written research proposal prior to taking the Graduate Board Oral Examination.

Prior to taking the Graduate Board Oral (GBO) examination, students should work with their research advisor and write a research proposal. The written proposal should be sent to the Graduate Board Oral committee and the ECE academic program coordinator at least two weeks prior to the scheduled exam date. While all committee members are encouraged to provide feedback, following the GBO the proposal must be approved by only the ECE members of the exam committee.

The written proposal should be no more than 6 pages with 1 inch margins and 10 point font, excluding references. The proposal should be organized into 3 sections as follows.

1. Description of the significance of the proposed work
 - a. Describe the problem that will be addressed
 - b. Summarize the current state of the art and the limitations of current approaches
2. Description of the innovation of the proposed work
 - a. Describe what is new in the proposed research and how it will address the limitations of current approaches
 - b. Describe the anticipated impact of the proposed research in terms of what difference it will make if it is successful.
 - c. Describe any preliminary results that have already been achieved for the proposed work.
3. Description of the anticipated approach to completing the research
 - a. Organize the work into the major tasks and describe them
 - b. Provide an anticipated timeline for the completion of the tasks
 - c. Summarize the anticipated risks to success and provide some alternative strategies

Students must pass the Graduate Board Oral (GBO) Examination. The exam should be scheduled prior to the start of the sixth semester although the exam can take place after this date.

The purpose of the examination is to test the depth and breadth of the student's knowledge and reasoning abilities. The examination typically is based on the student's course background but may include the proposed dissertation topic. The examination is conducted by five faculty members: two ECE professors, two professors from JHU PhD granting departments outside ECE, and one additional professor that can be either from inside or outside of ECE. At least one of the outside members must be Professor or Associate Professor ranking such that they can chair the exam. Additionally, one departmental alternate and one outside alternate are also required. Note that for GBO examination committee purposes, the research advisor is counted as a member of the ECE Department regardless of affiliation.

The Graduate Board *must approve* any committee member who is either from outside the university or who is from a department, laboratory or institute within Johns Hopkins that does not sponsor a Ph.D. program. The Director of Graduate Studies or Department Head must provide a letter describing the need for a non-Hopkins committee member, a CV, and the examination form must

be submitted to the Graduate Board *four weeks* before the proposed examination. There can be at most one committee member that requires approval by the Graduate Board. Note that a committee member that has a joint appointment in a JHU Ph.D. sponsoring department does not need to be approved by the Graduate Board.

The members of the GBO examination committee are selected by the Department Head or Director of Graduate Studies and approved by the Chair of the Graduate Board. Although consultation with candidates and their faculty advisors regarding possible exam committee members is appropriate, election of the committee is the Department Head's or Director of Graduate Studies' responsibility and is not the candidate's responsibility or prerogative.

Students preparing to take the GBO must contact the Academic Program Coordinator to make arrangements at least five weeks prior to the intended exam date. Five weeks' notice will allow time to confirm availability of the proposed examiners and notify the Graduate Board by their notification deadlines. The Administrator is responsible for finding a room and submitting the form entitled *Oral Examination for Degree of Doctor of Philosophy* to the Graduate Board Office.

The Graduate Board chooses a GBO committee chair from among the committee members that are not from the ECE Department and sends an information letter and the GBO report form back to the Administrator who forwards a copy to the chair of the examination committee. The Administrator sends a confirmation email to all the committee members, committee alternates, and the candidate.

The GBO exam should be scheduled for 2 hours. Per the GBO rules, the exact format is at the discretion of the GBO chair, however we anticipate it will consist of a short presentation by the candidate on their proposed research followed by the GBO exam. Per GBO rules this is a closed exam, thus the research proposal presentation and GBO exam are open to members of the GBO committee only. Per the GBO rules, the scope of the GBO questions is not limited to the proposed research and can cover things such as coursework etc.

The possible outcomes of the GBO examination include: an unconditional pass, a conditional pass (with the requirements to be met written down on the report form), or failure. In the latter case, if the chair of the GBO committee recommends reexamination, he/she must indicate with whom and when. At least one person from the original committee must be on the next committee. The Graduate Board does not allow more than two examinations. After the GBO examination, the chair of the GBO committee submits the original signed GBO report form to the Administrator, where a copy will be placed in the student's file and updates the ECE graduate student list.

For more information on the GBO, consult the following website:

<http://homewoodgrad.jhu.edu/academics/graduate-board/graduate-board-oral-exams>

2.6. Dissertation and Public Dissertation Defense

Students must submit a written Dissertation.

The guidelines for the preparation of dissertations can be obtained from <https://www.library.jhu.edu/library-services/electronic-theses-dissertations/formatting-requirements/> Students are responsible for paying the submission fee.

The Dissertation must have two Dissertation Readers with the first reader being the Research Advisor. The Director of Graduate Studies approves the choice of readers nominated by the Research Advisor. <https://homewoodgrad.jhu.edu/academics/graduate-board/degree-candidacy/>

Referees (also known as readers) are responsible for signing the 'readers letter/report' that confirms that the dissertation is a significant contribution to knowledge and worthy of publication. At least one referee should be internal to the student's academic program, external referees (to the university) must be approved by the Graduate Board through the same process as external examiners participating in the Graduate Board oral examination.

The Graduate Board specifies that:

The two principal readers are responsible for submitting a written report recommending acceptance of the dissertation. The report should testify that the work is a significant contribution to knowledge worthy of publication in its present form or with appropriate modifications and that it is worthy of acceptance in partial fulfillment of the University requirements for the Ph.D. It must contain the student's full name and the complete final title of the dissertation. The letter must be on letterhead, signed by both readers, and include the readers' ranks, titles, departments, and schools.

Dissertations will be submitted only by electronic media. Hardbound books will not be printed on campus, but information will be provided on where dissertations can be printed and bound. The library will do some brief format checking. They will then approve the submission or email the student about necessary changes. For information, see <http://www.library.jhu.edu/library-services/electronic-theses-dissertations/>.

Students must complete a public Dissertation Defense.

The student must propose a dissertation committee consisting of between three and five members, including the Research Advisor. At least two must have tenure-track appointments and three have Ph.D. supervising privileges in the ECE Department (see §A.1.).

The student submits a copy of their Ph.D. dissertation, the readers' letter, the names of the Dissertation Committee, and an abstract of the dissertation (used for the defense announcement) to the Administrator, who informs the faculty by email that the dissertation and readers' letter are available in the department office and schedules the Dissertation Defense. The student also sends the abstract and a headshot to the Communications Specialist who is responsible for producing and posting the announcement of the defense. Note that there will be a minimum of three weeks needed between this submission and the dissertation defense described next.

Once the Dissertation Committee has been approved, the Administrator prepares the Doctoral Dissertation Defense Report Form. The Dissertation Committee administers a Public Dissertation Defense no sooner than three weeks after submission of the dissertation and votes on the acceptance of the dissertation. The chairman of the Dissertation Committee should complete and sign the Doctoral Dissertation Defense Form and return it to the Administrator.

International students must visit the International Office at least two months in advance of the defense date to ensure that their visa status and application for their EAD card and Optional Practical Training is in place.

Further information on the dissertation defense preparation is available at the following: _____

<http://engineering.jhu.edu/ece/dissertation-defense-preparation>

3. MISCELLANEOUS ACADEMIC INFORMATION

3.1. *Teaching Assistant and Course Assistant Positions*

To assist in the teaching function of the Department, Teaching Assistant (TA) and Course Assistant (CA) opportunities are provided to students to grade homework and papers, conduct laboratories, and hold office hours. TAs and CAs are remunerated for their efforts. Any position openings are announced at the beginning of each semester.

3.2. *Ethics*

Graduate students are expected to be aware of academic ethics and of actions that constitute unethical behavior. In brief, students must submit work that represents their own efforts. When ideas and/or results are drawn from other sources, those sources must be cited in the submitted work. Students may not collaborate or discuss solutions of any assignment prior to submission without explicit permission from the instructor. Use of email is to be strictly professional in nature. Unprofessional or inappropriate email will be considered a violation of University ethical policies.

Violations of academic ethics can have a severe impact on a student's program beyond the penalties described below. Those involved in unethical behavior will lose the confidence of the faculty and may be unable to find any faculty member willing to serve as their Research Advisor.

Faculty members will usually deal directly with students suspected of unethical behavior in their courses and will assign an appropriate penalty. The penalty may be failure in the assignment or examination or failure in the course. Faculty and students may seek the assistance of the Department Chair when agreement on the charges and penalties cannot be reached. In all cases, a summary of the charges and penalties will be placed in the student's permanent file.

Information about academic policies of the Whiting School of Engineering can be found at <http://engineering.jhu.edu/graduate-studies/academic-policies-procedures-graduate/>. Please read them.

3.3. *Research/Academic Probation*

Whenever it is determined that a graduate student has failed to meet minimum academic, research, and/or TA requirements, that student may be placed on academic probation. This change in status requires a formal letter and a meeting between the student and either their faculty advisor, department Head, and/or departmental Director of Graduate Studies. The letter should clearly outline the student's research/academic shortcomings, indicate the corrective measures necessary to remain in the program and state the length of the student's probationary period. Any funding ramifications for the student should be included as well.

Please see the [full policy](#) for more information on process, appeals, etc.

3.4. *Graduate Student Annual Review Policy*

The Johns Hopkins University and Whiting School of Engineering require that once per academic year, all full-time Homewood graduate programs carry out a written review of all doctoral students conducting thesis research. The review includes the opportunity for the student to offer self-

evaluation of their research and academic progress. The evaluation form used in the ECE department is at the end of this advising manual under Academic Resources.

In Spring, students should initiate the evaluation process with their advisors. The students should complete the evaluation form and meet with their advisors to discuss progress and goals for the next year. The student and advisor will both sign the evaluation, after which it will be delivered to the Academic Administrative staff by June 30.

If a student has more than one advisor, both advisors should participate in the evaluation process and must sign the evaluation form. For students with a primary advisor outside the Department of Electrical and Computer Engineering and a second advisor who is a full-time tenure-track Electrical and Computer Engineering professor, both professors must participate in the evaluation and sign the evaluation form.

Incomplete evaluation forms will be returned to the student for completion.

3.5. Academic Deadlines

Students preparing to complete their degree program in a given semester should see the Administrator to ensure that all necessary forms and requirements have been completed and submitted *prior* to the academic deadlines for the semester. Graduation and registration deadlines can be found on the Homewood Registrar's website: <https://studentaffairs.jhu.edu/registrar/students/> The deadlines to submit all certification material are usually:

- Fall (late-October)
- Winter (mid- to late-January)
- Spring (early-April for Ph.D., early-May for M.S.E.)
- Summer (late-August)

Students who have not completed their requirements by the first day of classes must register for the current semester. Those who complete their requirements prior to the October deadline will receive a full tuition refund for the fall semester, including any non-resident status fees. Tuition paid from departmental funds or research grants will also be refunded.

Those who have completed their requirements in the summer or fall will receive an interim certificate from the registrar's office indicating that all requirements have been met, and notation will be made on their transcript. Diplomas are awarded once a year, at the May Commencement. Additional information is available at <http://homewoodgrad.jhu.edu/academics/graduate-board/deadlines>

4. FINANCIAL AID

The Graduate Admissions and Fellowships Committee in the department make decisions on financial aid. Among other actions, this committee awards departmental fellowships to newly admitted students. All PhD students in a full-time, resident status are fully supported (tuition, salary/stipend, and individual health insurance premium) by internal or external funds for the duration of their PhD program while they remain in a full-time, resident status. The University, Department, and Research Advisor share in supporting the student during their stay.

The Office of Student Financial Services has other financial aid sources available. Any enrolled or accepted graduate student who is a U.S. citizen, U.S. permanent resident, or eligible non-citizen may apply for federal and state financial aid. Sources of aid, eligibility requirements, applications, and other information are available at <https://finaid.jhu.edu/>

5. PAYROLL

Paychecks are distributed semi-monthly, on the 15th and the last day of the month. If payday falls on a weekend or holiday, paychecks are distributed the last regular working day preceding the payday. For your convenience, Direct Deposit to your bank account is available; log in to my.jh.edu and select HR, then login to ESS, click Payroll Information and then Direct Deposit. Follow the instructions to set up your Direct Deposit.

Many of our graduate students are paid a salary; a few are paid a stipend. Please make sure you understand whether you receive a *salary* or a *stipend*. The difference may have important tax ramifications, particularly for international students. International students may contact the Office of International Services at ois@jhu.edu or 667-208-7001, or the Tax Office at tax@jhu.edu or 443-997-8688 for assistance.

All PhD students in a fulltime, resident status must be fully supported (tuition, salary/stipend, and individual health insurance premium) by internal or external funds for the duration of their PhD program while they remain in a fulltime, resident status. No PhD student can be self-funded and typically the WSE Dean's office will not support salary/stipends or health insurance premiums.

5.1. Salaries

The department determines standard salaries for all Research Assistants. Research Assistants are paid from the research funds of their advisor. The current minimum salary for departmental Research Assistants in the doctoral program is \$35,600.

Salaries are subject to Federal and State tax withholding, which is done automatically through the Payroll Office and will be reflected on the pay stub. U.S. students will want to complete a W-4 Federal Tax withholding form and a MW-507 Maryland State withholding form and return them to the University Experiential Learning. If you do not submit these forms, Payroll will tax you at the higher default rate.

5.2. Stipends

Stipends are paid to those students on Departmental or other Fellowships.

Students usually have no income or other taxes withheld. Students on Fellowships are responsible for filing and paying taxes. Students receiving stipends may have to file quarterly withholding reports with the Internal Revenue Service. For information contact the Tax Office at http://finance.jhu.edu/depts/tax/fellgrad_adm.html, 443-997-8688, or tax@jhu.edu.

6. SECURITY

While the Hopkins Security Department provides ample and appropriate security to the campus, they remind us that we must play our part. Please exercise common sense when entering and leaving your office, classrooms, and labs.

- When you leave your office, if you are the only one there, lock the doors even if you leave only for a minute. Thefts take only a few seconds and valuable equipment and your work can disappear instantly.
- Secure your computers, especially laptops. Take your laptops with you when you leave your office.
- Back up your work onto separate disks or systems in case something happens to computer via virus, equipment problems, or theft. The University provides free anti-virus software that can be downloaded from the website at <http://it.jhu.edu>.
- Lock your car and do not leave any items inside your car in plain sight. Secure them in your trunk or bring them with you.
- Secure your personal items such as your purse, wallet, books, equipment, and your coat or jacket.
- If you see someone suspicious in your lab or office, don't confront the individual, contact Security at 410-516-7777 right away. Your personal safety is most important.
- If you are uncomfortable walking through campus or to your car at night or otherwise are concerned for your safety, the Security department provides escort services to selected locations. Call 410-516-8700 to arrange for an escort.
- Emergency Contact numbers can be found here: <https://www.jhu.edu/life/security/emergency-contact-information/>

7. STUDENT HEALTH AND WELL-BEING

Johns Hopkins University strives to promote awareness of and holistic support for student well-being. It values inclusion and overall health, and promotes strategies for resilience in the context of stressful situations and life events common among undergraduates and graduate students.

Students who feel sick or have questions about their health can visit the Student Health and Wellness Center. You may make an appointment and get more information about their services and location here: <https://studentaffairs.jhu.edu/student-health/>

If you are struggling with anxiety, stress, depression, or other mental health-related concerns, please consider visiting the JHU Counseling Center. If you are concerned about a friend, please encourage that person to seek out counseling. The Counseling Center is located at 3003 North Charles Street in Suite S-200 and can be reached at 410-516-8278 and online at studentaffairs.jhu.edu/counselingcenter.

Other support services offered to JHU students to support the 8 facets of well-being (emotional and mental, physical, social, sexual, spiritual, financial, environmental, and professional) can be found here: <https://wellbeing.jhu.edu/>

8. MISCELLANEOUS INFORMATION

8.1. *Student Employment*

Apart from the graduate student support mechanisms discussed earlier, opportunities for part-time employment opportunities arise within the University, and in the Baltimore/Washington area. Normally, opportunities known to the department are posted and/or communicated informally. A wise student will let his advisor and other faculty members know of his interests. The faculty believes these additional jobs can cut heavily into the time, energies, and concentration available

for the Ph.D. program if not appropriately moderated. Therefore, students should discuss their plans with their advisors. In addition, the following regulations have been adopted:

- Full-time graduate students are permitted no more than 20 hours per week of additional employment.
- Full-time graduate students enjoying nominally full support by the University are permitted no more than eight (8) hours per week of additional employment.

The University Experiential Learning office offers opportunities for employment for many positions on the campus. They will help you determine your work eligibility. Their website is located at <https://studentaffairs.jhu.edu/studentemployment/>.

8.2. Library Facilities

The Milton S. Eisenhower Library makes available to the ECE Department several carrels (desks with lockers) each year. The assignment of carrels is made in August or September, and graduate students interested in obtaining a carrel should notify the Administrator. Students who would like to reserve a locker or group study room in the library should visit <https://www.library.jhu.edu/support/> or contact Sue Vazakas, the Librarian and Academic Liaison for the Electrical and Computer Engineering Department. She can be contacted by email at svazakas@jhu.edu or phone at 410-516-4153.

The Library also purchases books and journals based on departmental requests. Student requests for books or journals should also be communicated to Sue Vazakas.

8.3. Computer Facilities

There are plenty of computing facilities and services available to the Johns Hopkins community. The Information Technology website at <http://it.jhu.edu> offers an overview of the IT Organization, its projects and services, support for applications and general questions, and news about emerging technologies and strategic imperatives, as well as e-mail, web, and file sharing services.

The Krieger Computing Lab located in Krieger Hall is maintained by HITS. No account is required, just a student ID, for use of the 130 workstations which have basic office and imaging applications.

8.4. Information Technology

The Information Technology Department at Johns Hopkins provides email services through the Johns Hopkins Enterprise Mail (JHEM) server. A JHEM account can be activated once you have a J-Card. To activate your JHEM account, go to <https://my.jh.edu/portal/web/jhupub> and follow the instructions for first time logins.

8.5. Student Disability Services

The Office of Student Disability Services (SDS) assists full-time undergraduate and graduate students in the Krieger School of Arts and Sciences and the Whiting School of Engineering with disability concerns, in compliance with the provisions of the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. SDS assists the University community in understanding the effects of disabilities and in eliminating the physical, technical, attitudinal, and programmatic barriers that limit the range of opportunities for students with disabilities, as well as provides individuals with reasonable accommodations. The SDS maintains and protects the

confidentiality of individual records as required by law. For additional information and to access the services of the SDS office, please see their website at <https://studentaffairs.jhu.edu/disabilities/> or contact them at 410-516-4720 or studentdisabilityservices@jhu.edu. You may also visit their office in Mason Hall, Suite 101.

9. STUDENT GROUPS AND ACTIVITIES

9.1. *Institute of Electrical and Electronics Engineers, Inc. (IEEE)*

The Johns Hopkins University student chapter of the Institute of Electrical and Electronic Engineers strives to promote the career opportunities available and to raise awareness of new developments in the field among electrical and computer engineering students by fostering interaction among students, faculty, employers and professional engineers.

Graduate students are invited to join the student chapter of the IEEE. Applications are available in the ECE Department office.

9.2. *University and Department Graduate Student Representative*

Each year the graduate students elect a full-time Ph.D. student to serve as a departmental representative to the University's Graduate Representative Organization. The GRO, whose website is <https://studentaffairs.jhu.edu/gro/>, is an advocacy group for all graduate students. The GRO serves the student body as a liaison to the University's schools, administration, and dean's offices as well as hosts social activities and provides extensive information about life on campus and in and around Baltimore. Each department sends a graduate student representative to serve in the GRO, and an announcement is made each year as to who will represent the department. You are welcome to forward to the representative your questions and concerns, which will be presented at GRO meetings.

9.3. *Extracurricular Activities*

Many groups and organizations throughout the University provide ample opportunities for social times and fun. Check out these websites for information:

- Campus Life - <https://www.jhu.edu/life>
- Arts and Culture - <https://www.jhu.edu/life/arts-culture>
- Baltimore Area Convention and Visitors Association - <http://baltimore.org>
- Baltimore Office of Promotion and the Arts - <http://promotionandarts.org>

10. NOTICE OF NONDISCRIMINATION POLICY STATEMENT

The Johns Hopkins University admits students of any race, color, gender, religion, national or ethnic origin, age, disability, or veteran status to all of the rights, privileges, programs, benefits, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, gender, religion, sexual orientation, national or ethnic origin, age, disability, or veteran status in any program or activity, including the administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other University-administered programs. Accordingly, the university does not take into consideration personal factors that are irrelevant to the program involved.

Questions regarding access to programs following Title VI, Title IX and Section 504 should be referred to the Office of Institutional Equity for the University, responsible for the coordination of equal opportunity programs, Wyman Park Building, Suite 515, (410) 516-8075.

Appendix

A.1. ELECTRICAL AND COMPUTER ENGINEERING PERSONNEL

A.1.1. Tenure and Tenure Track Faculty

Andreas G. Andreou, Professor and Interim-Chair
Muyinatu Bell, Assistant Professor
Rama Chellappa, Bloomberg Distinguished Professor
Najim Dehak, Associate Professor
Mounya Elhilali, Charles Renn Faculty Scholar and Professor
Ralph R. Etienne-Cummings, Professor
Amy C. Foster, Associate Professor
Mark A. Foster, Associate Professor and Director of Graduate Studies
John I. Goutsias, Professor
Hynek Hermansky, Julian S. Smith Professor
Pablo A. Iglesias, Edward J. Schaefer Professor
Jin U. Kang, Jacob Suter Jammer Professor
Sanjeev P. Khudanpur, Associate Professor
Jacob B. Khurgin, Professor
Enrique Mallada, Assistant Professor
Vishal Patel, Assistant Professor
Jerry L. Prince, William B. Kouwenhoven Professor
T. E. Schlesinger, Professor and Benjamin T. Rome Dean
Susanna Thon, Associate Professor and Director of Undergraduate Studies
Trac D. Tran, Professor
Archana Venkataraman, John C. Malone Assistant Professor
Howard L. Weinert, Professor
James West, Professor

Note that all tenure-track faculty members are eligible to supervise doctoral dissertations in the ECE doctoral program.

A.1.2 Research Faculty and Joint/Secondary Appointments

Paul A. Bottomley, Russell H. Morgan Professor, JHU SOM Radiology
Carlos Castillo, Associate Research Professor
A. Brinton Cooper III, Associate Research Professor
Noah I. Cowan, Associate Professor, Mechanical Engineering
Nicholas Durr, Assistant Professor, Biomedical Engineering
Mahyar Fazlyab, Assistant Research Professor
Eric C. Frey, Professor, JHU SOM Radiology
Israel Gannot, Associate Research Professor
Dennice F. Gayme, Associate Professor, Mechanical Engineering
Gregory D. Hager, Mandell Bellmore Professor, Computer Science
Xingde Li, Associate Professor, Biomedical Engineering
Michael I. Miller, Bessie Darling Professor and Director, Biomedical Engineering
Laureano Moro-Velazquez, Assistant Research Professor

Arvind Pathak, Associate Professor, JHU SOM Radiology
Philippe Pouliquen, Assistant Research Professor and Lecturer
Charbel Rizk, Associate Research Professor and Lecturer
Sri Sarma, Associate Professor, Biomedical Engineering
Webster Stayman, Assistant Professor, Biomedical Engineering
Nitish V. Thakor, Professor, Biomedical Engineering
Jesús Villalba, Assistant Research Professor
Raimond L. Winslow, Raj & Neera Sing, Professors, Biomedical Engineering

A.1.3 Department Staff

Nicole Aaron, Administrator
Belinda Blinkoff, Senior Academic Program Coordinator
Laura Granite, Administrative Coordinator
Jabari Joyner, Budget Analyst
Tom Judy, Senior Grants & Contracts Specialist
Cora Mayenschein, Research Services Analyst
Sathappan Ramesh, Senior Laboratory Coordinator
Dana Walter-Shock, Senior Academic Program Coordinator

A.2 GRADUATE ADVISING RESOURCES

A.2.1. JHU Mentorship Commitments of Faculty Advisors and PhD students



JHU Mentorship Commitments of Faculty Advisors and PhD Students

This document outlines mentoring expectations of faculty advisors and of PhD students at Johns Hopkins University. These expectations should be discussed together.

Faculty advisors should commit to the following responsibilities:

Training:

- **The PhD advisor has the responsibility to mentor the PhD student.** This responsibility includes committing to the training of their PhD student, building on the PhD student's individual professional background and in support of their individual professional aspirations.
- **The PhD advisor has the responsibility to participate in ongoing and regular meetings with their advisees to discuss academic and research progress.** The advisor and student should agree on expected frequency of and preparation for meetings and use meetings to brainstorm ideas, troubleshoot challenges, and outline next steps. The advisor should identify a co-advisor/mentor should the primary advisor be unavailable for an extended period (sabbatical, leave, etc.).
- **The PhD advisor has the responsibility to participate in a formal annual meeting with the student to discuss academic progress and next steps in the academic program.** This responsibility includes helping to ensure that the document summarizing this annual discussion is completed and submitted in accordance with program requirements.
- **The PhD advisor has the responsibility to encourage their advisees to reach out, as relevant, to additional co-advisors or informal mentors.**
- **The PhD advisor has the responsibility clarify the student's funding package and to clarify any work and/or teaching expectations associate with the package.**
- **The PhD advisor has the responsibility to contribute to a training environment that fosters independent, scholarly research, and professional growth.**

Research

- **The PhD advisor has the responsibility to provide guidance in scholarly research.** This responsibility includes helping to identify a workable research project and helping to set reasonable goals and timelines for research completion. The advisor should encourage the student to expand their skill sets and share ideas with others at Johns Hopkins and

externally.

- **The PhD advisor has the responsibility to monitor research progress.** The advisor should encourage effective use of time. The advisor should meet regularly with the PhD student to hear updates on progress, results, and challenges in activities and research.

Professional development:

- **The PhD advisor has the responsibility to discuss career development with the PhD student, including in any number of sectors of interest to the student.** PhD advisors should assist in identifying resources to further the student's professional goals.
- **The PhD advisor has the responsibility to participate in a formal annual meeting with the PhD student to discuss professional development goals.** The advisor should help to ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.
- **The PhD advisor has the responsibility to nominate the student for relevant professional opportunities and try to connect their advisees to relevant professional contacts and networks.**
- **The PhD advisor has the responsibility to allow time outside of research for student engagement in professional development activities** including, for example, skill building workshops, professional conferences, additional research collaborations, or other informational sessions.

Respectful engagement and well-being:

- **The PhD advisor has the responsibility to treat their advisees, other students, and colleagues with respect at all times.**
- **The PhD advisor has the responsibility to commit to being available to meet with the PhD student.** The advisor and the student should agree on expected frequency of and preparation for meetings, and expected timeframe for responding to emails and for providing feedback on work products. The PhD advisor should give their full attention during meetings and should reach out to PhD students who are not making contact.
- **The PhD advisor has the responsibility to be supportive during both successful and discouraging periods of training.**
- **The PhD advisor has the responsibility to communicate in a respectful and constructive manner, including if the advisor has concerns that the PhD student is not meeting the expectations outlined in this document.** This responsibility includes using concrete and specific language when providing suggestions or critiquing work.
- **The PhD advisor has the responsibility to take an interest in the student's well-being, to listen to any concerns, and to connect the student, as appropriate, with additional resources.**

Policies:

- **The PhD advisor has the responsibility to become familiar with and respect University, school, and program policies for PhD students.** The advisor will acknowledge all PhD student benefits and entitlements, including, as relevant, paid and unpaid leave.
- **The PhD advisor has the responsibility to discuss with the student relevant policies, commitments, and expectations related to funding, work, research assistantships, teaching assistantships, sick leave, or vacation.**

Responsible conduct:

- **The PhD advisor has the responsibility to become familiar with university and professional codes of responsible conduct for PhD students.** This responsibility includes reporting any possible violations as required to relevant parties, including to the relevant Dean's office and to the Office of Institutional Equity.
- **The PhD advisor has the responsibility to discuss and help clarify authorship or intellectual property issues and appropriately recognize the student's contributions to any collaborative work.**
- **The PhD advisor has the responsibility to model professional behavior in both interpersonal interactions and in scholarly integrity.**
- **The PhD advisor has the responsibility to complete Title IX Training regarding sexual misconduct and sexual harassment as required by the University.** <http://oie.jhu.edu/training/>

Continuous quality improvement as an advisor:

- **The PhD advisor has the responsibility to participate in mentor training and best practices discussions.** This responsibility includes striving to be a better mentor and to learn tips and practices that improve their work and skills as an advisor.
- **The PhD advisor has the responsibility to ask advisees for constructive feedback on mentoring.** This responsibility includes doing their best to respond professionally to these suggestions and consider whether or how best to incorporate them into their mentoring interactions.

PhD students should commit to the following responsibilities:

Training:

- **The PhD student has the primary responsibility for the successful completion of their degree.**
- **The PhD student has the responsibility to familiarize themselves with academic milestones and to strive to meet all milestones within the expected timeframe.**
- **The PhD student has the responsibility to meet regularly with the PhD advisor.** This responsibility includes providing the advisor with updates on the progress, outcomes, and challenges in coursework, research, and academic or professional activities. The advisor and the student should agree on expected frequency of and preparation for meetings, and will use meetings to brainstorm ideas, troubleshoot challenges, and outline expectations for work and timelines.
- **The PhD student has the responsibility to participate in a formal annual meeting with the advisor to discuss academic progress and next steps in the academic program.** The student should ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.
- **The PhD student has the responsibility to seek additional mentors to expand their training experience, as appropriate.**
- **The PhD student has the responsibility to understand their funding package and to clarify any work and/or teaching expectations in line with this funding.**

Research:

- **The PhD student has the responsibility to work with the advisor to develop a thesis/dissertation project.** This responsibility includes establishing a timeline for each phase of work and striving to meet established deadlines.
- **The PhD student has the responsibility to seek guidance from their advisor, while also aspiring increasingly for independence.**
- **The PhD student has the responsibility to engage in activities beyond their primary research responsibilities.** The student should attend and participate in any research-related meetings and seminars relevant to their training area.

Professional development:

- **The PhD student has the primary responsibility to identify their professional goals and to develop their career plan following completion of the PhD degree.** This responsibility includes familiarizing themselves with professional development opportunities within Johns Hopkins and externally. Students should identify specific activities to pursue that will advance their professional development and networking.
- **The PhD student has the responsibility to prepare a Professional Development Plan**

annually that outlines their research and career objectives. This responsibility includes discussing this plan annually with the advisor. The student should ensure that the document summarizing this discussion is completed and submitted in accordance with program requirements.

Respectful engagement and well-being:

- **The PhD student has the responsibility to treat the advisor, other mentors, and colleagues with respect at all times.**
- **The PhD student has the responsibility to make themselves available, within reason, to meet with the advisor upon request.**
- **The PhD student has the responsibility to communicate in a respectful and constructive manner if they have concerns that the advisor is not meeting the expectations outlined in this document.**
- **The PhD student has the responsibility to be open to constructive criticism by the advisor, other mentors, and colleagues.**
- **The PhD student has the responsibility, as possible, for their well-being, should consider discussing any concerns with the advisor or other mentor(s), and should connect with available resources when needed.**

Policies:

- **The PhD student has the responsibility to familiarize themselves and comply with University, school, and program-specific policies and requirements for PhD students.**
- **The PhD student has the responsibility to discuss with the advisor relevant policies, commitments, and expectations related to funding, work, research assistantships, teaching assistantships, sick leave, or vacation.** As needed, the student will provide any documentation relevant to stated policies on leave and other requirements to the student's program, school, or the University.

Responsible conduct:

- **The PhD student has the responsibility to conduct themselves in a responsible and ethical manner at all times.**
- **The PhD student has the responsibility to familiarize themselves with University codes of responsible conduct for PhD students.**
- **The PhD student has the responsibility to engage in responsible research conduct.** This responsibility includes completing the responsible conduct of

research training requirements of their specific school and program, and any specific discipline training requirements (e.g., animal and human subject work). The student will maintain accurate and contemporaneous records of research activities in accordance with the norms of best practices in their own discipline. The student should discuss authorship and intellectual property issues with the advisor.

- **The PhD student has the responsibility to complete Title IX Training regarding sexual misconduct and sexual harassment as required by the University.**

<http://oie.jhu.edu/training/>

GRADUATE STUDENT ANNUAL REVIEW FORM 2021 – 2022 ACADEMIC YEAR

Student Name: _____ **Year of Study:** Choose an item.

Advisor: _____ **Date:** _____

Milestones	Date Passed (Month, Year)	Semester Expected
Departmental Qualifying Exam		
Graduate Board Oral Exam		
Written Proposal		
Proposal Seminar		

Responsible Conduct of Research Completed? No Yes **When?** _____

Part 1 - to the student: This form is intended to summarize your accomplishments in the past year and indicate your plans for the coming year. Please complete, sign, and discuss this with your advisor. Continue on as many sheets as necessary.

COURSES COMPLETED IN THE PAST TWO SEMESTERS:

WERE YOU A TEACHING OR RESEARCH ASSISTANT? IF YES, HOW DO YOU THINK YOU PERFORMED IN THIS AREA?

PAPERS SUBMITTED OR PUBLISHED IN LAST YEAR:

CONFERENCE AND INTERNAL/INFORMAL PRESENTATIONS MADE DURING THE LAST YEAR:

RESEARCH ACCOMPLISHMENTS:

RESEARCH, ACADEMIC, AND OTHER GOALS IN THE COMING YEAR (advisor must agree):

ANY ANTICIPATED CHALLENGES OR OPPORTUNITIES FOR THE UPCOMING YEAR?

WHEN DO YOU EXPECT TO GRADUATE?

WHAT ARE YOUR LONG-TERM PROFESSIONAL GOALS?

YOUR COMMENTS:

ADVISOR'S COMMENTS:

I have reviewed this document with my advisor and I have seen her/his comments.

Student signature _____ Date _____

Advisor signature _____ Date _____

Student Name: _____ Year of Study: Choose an item.

Advisor: _____ Date: _____

Part 2 - to the advisor: This form is intended to guide a discussion with your student about their accomplishments, progress, and areas for improvement. This discussion is an opportunity to evaluate the student/advisor relationship and create a more effective research partnership. Below are several topics that should be covered in the discussion. Please think about these issues before meeting with the student. Space is provided for notes. **Both you and the student will sign this form.**

Research (discuss as applicable: thesis topic, future publications, ability to conduct quality research, ability to think of and discuss new ideas, overall progress)

Comments:

Professionalism (discuss as applicable: conduct, presentation skills, writing skills, communication skills, teamwork)

Comments:

Logistics (discuss as applicable: graduation timeframe, future state of student funding, specific grant requirements, present funding, progress towards student's post-graduate goals)

Comments:

Educational Progress (discuss as applicable: academic progress, progress towards DQE or GBO, teaching opportunities, TA opportunities)

Comments:

Professional Development Goals (discuss as applicable: career goals, research opportunities to work towards these goals, educational opportunities that will assist in achieving these goals)

Comments:

Other (discuss as applicable) – Unaddressed student or advisor concerns

- _____
- _____

Student signature _____ Date _____

Advisor signature _____ Date _____