

School of Electrical Engineering and Computer Science
Graduate Handbook
2020-2021

Guidance for ECE and CS graduate students and faculty.

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1 ECE and CS Graduate Program Roles

Graduate Program Coordinator and Support Staff

The Graduate Program Coordinator is often who our graduate students communicate with most frequently. The Coordinator manages all graduate student files and paperwork, is a first point of contact for “how do I” questions and provides general student support. The current Graduate Program Coordinator for ECE and CS is Calvin Hughes. The ECE and CS programs are also supported by an additional staff person, currently Dakota Nelson, who provides back up for Calvin. The best way to reach Calvin and Dakota is via eeecs.gradinfo@oregonstate.edu as both Calvin and Dakota check this email address.

Major Advisor

For M.S. and Ph.D. students, the major advisor is who guides your degree, including coursework and project or thesis. See Section 7 for more information. For M.Eng. students, the major advisor is usually assigned by the department to the student and is usually a member of the Graduate Curriculum Committee. The primary point of contact for M.Eng. students is the Graduate Program Coordinator.

Associate Head for Graduate Programs

The Associate Head for Graduate Programs is a member of the EECS faculty who manages the Graduate Programs. The Associate Head is a point of contact for grievances and academic progress issues, but generally this starts with a conversation with the Graduate Program Coordinator first. The Associate Head for Graduate Programs is currently Glencora Borradaile.

Graduate Student Progress Committee

The Graduate Student Progress Committee oversees all academic progress concerns and petitions. The Committee is comprised of the Graduate Program Coordinator, the Associate Head for Graduate Programs, the Chair of the Graduate Curriculum Committee, the Associate Head for Research and the Associate Head for Undergraduate Programs.

2 Academic Requirements

This chapter outlines all the academic requirements and procedures for graduate students in the ECE and CS programs. General academic regulations can be found in the Oregon State University catalog:

<https://catalog.oregonstate.edu/regulations/>

The Graduate School at Oregon State University has a number of policies that effect all graduate students as well as a number of resources for graduate students:

<https://gradschool.oregonstate.edu/current>

2.1 Academic Progress

A student's academic progress is measured through coursework, oral examinations (M.S. and Ph.D.), meeting research project deadlines with their major advisor (M.S. and Ph.D.), and degree timelines (outlined in Section 2.2).

Students will be warned if their academic progress is not meeting the requirements below, and an academic plan will be developed to remain on track to progress toward degree completion. Barring exceptional circumstances, not meeting our academic progress guidelines in a subsequent quarter will result in dismissal from the student's graduate program, with possible allowance to change degree programs (from Ph.D. to M.S. or M.Eng., or from M.S. to M.Eng.). Major professors (for M.S. & Ph.D. students) will provide feedback and consult on warnings and dismissals that are reviewed by the Graduate Student Progress Committee. In addition, unsatisfactory academic progress (that is, not meeting the expectations set out in this document) may result in immediate termination of a graduate assistantship or non-renewal of assistantships in the School of EECS.

Reminders for deadlines (e.g. program of study, qualifier, spring academic review) will be sent to students and (when applicable) their advisor.

Students who are restricted from full course loads or pursuing their degree part-time may negotiate alternate deadlines for program requirements in consultation with the Associate School Head for Graduate Programs and their major professor.

Students who need an extension to degree timelines due to circumstances outside of their control can request the extension to the Associate School Head for Graduate Programs who will present the request to the Graduate Student Progress Committee with input from the student's major advisor.

2.2 Degree timelines

Details of degree requirements are given in the rest of this guide, but below are the major milestones. The quarter numbers do not count summer quarters: e.g., for a fall start, the 4th quarter is fall of the second year of study. Relevant section numbers with further details are given in brackets. For M.Eng. students who begin their studies with INTO, the first quarter is their first quarter upon “leaving” INTO: after progressing from the pathway or after a quarter of INTO support for MID students.

Quarter	M.Eng.	M.S.
1	ENGR 520 (2.16) Submit program of study (2.13)	Submit a goal sheet (2.6) Responsible Conduct of Research Training (2.7)
2		Identify major advisor (2.11) Submit program of study (2.13)
Throughout	Maintain a 3.0 GPA (2.9) Complete ≥ 2 courses per quarter (2.10)	Maintain a 3.0 GPA (2.9) Spring Academic Review (2.8)
Last	ENGR 521 (2.16)	Final oral exam (2.17)
Quarter	Ph.D. (with prior M.S.)	Ph.D. (no prior M.S.)
1	Submit a goal sheet (2.6) Responsible Conduct of Research Training (2.7)	Submit a goal sheet (2.6) Responsible Conduct of Research Training (2.7)
3	Identify major advisor (2.11) Program of study meeting (2.13)	Identify major advisor (2.11)
Throughout	Maintain a 3.0 GPA (2.9) Spring Academic Review (2.8)	Maintain a 3.0 GPA (2.9) Spring Academic Review (2.8)
4	Qualifier exam (2.18.1)	
5		Program of study meeting (2.13)
7		Qualifier exam (2.18.1)
*	Preliminary exam (2.18.2)	Preliminary exam (2.18.2)
Last	Final oral exam (2.18.3)	Final oral exam (2.18.3)

* At least one term must elapse between the term in which the preliminary exam is completed and the term in which the final oral exam takes place. These deadlines are enforced by the Graduate School, with strict dates defining the beginning and end of terms.

2.3 ECE Program and Course Requirements

Official program requirements are available in the catalog. If there is a conflict between what is stated here and what is presented in the catalog, the catalog requirements take precedent:

<https://catalog.oregonstate.edu/college-departments/engineering/school-electrical-engineering-computer-science/electrical-computer-engineering-meng-ms-phd/>

	M.Eng.	M.S.	Ph.D.
Required Core	3 of the following: ECE 614, 520, 530, 550, 560, 570, 580, 590 An average GPA of at least 3.0 must be achieved over these 3 courses.		
Total Coursework ECE credits, or other as approved by the committee, excluding blanket and thesis credits, but may count the core classes taken above	20 graduate standalone credits	15 graduate standalone credits	36 graduate credits
Blanket Credits ECE 501, 505, 506, or 510 ECE 601 (Ph.D. only)	0 – 6	0 – 6	0 – 15
Thesis or Project	Portfolio Courses ENGR 520 and 521, 2 credits total	9 – 12 credits ECE 503 or 6 credits ECE 506	36 – 60 credits (ECE 603)
Responsible Conduct of Research Training	For details see Section 2.7.		
Total Graduate Credits	45	45	108

All programs of study submitted to the Graduate School must consist of at least 50% graduate stand-alone courses (numbered 500 and above); the remaining credits may be the 500 components of 400/500 “slash” courses.

M.Eng. or M.S. students without undergraduate degrees in Electrical Engineering or Electrical and Computer Engineering must complete one course from at least four of the following topic areas:

- A. ECE 390 or ECE 590
- B. ECE 322 or ECE 422 or ECE 520
- C. ECE 323 or ECE 423
- D. ECE 351 or ECE 451 or ECE 461 or ECE 550
- E. ECE 352 or ECE 462 or ECE 464 or ECE 560
- F. ECE 375 or ECE 471 or ECE 472 or ECE 473 or ECE 570

2.4 CS Program and Course Requirements

Official program requirements are available in the catalog. If there is a conflict between what is stated here and what is presented in the catalog, the catalog requirements take precedent:

<https://catalog.oregonstate.edu/college-departments/engineering/school-electrical-engineering-computer-science/computer-science-ma-meng-ms-phd/>

	M.Eng.	M.S.	Ph.D.
Breadth Requirement	At least two courses in each of three separate areas, not double counted: <ul style="list-style-type: none"> • Theoretical Comp. Science: CS 515-517 (M.Eng. & M.S. only), CS 52X • Artificial Intelligence: CS 53X • Computer Systems: CS 57X, CS 54X, ECE 57X • Programming Languages: CS 58X • Software Engineering: CS 560 – 564, CS 567, CS 569 • Human Computer Interaction: CS 564 - 568, ROB 567 • Computer Vision and Graphics: CS 55X • An area approved by the committee At least a 3.0 GPA must be achieved over these six courses.		
Depth Requirement	N/A	3 graduate courses	4 graduate courses
		A coherent set of courses giving preparation and support for the student's thesis or project, selected in consultation with and approved by the student's major professor. Two breadth courses may also be used as depth courses.	
Theoretical Computer Science			CS 515 and CS 517
Blanket Credits CS 501, 505, 506, or 510 CS 601 (Ph.D. only)	0 – 6	0 – 6	0 – 15
Thesis or Project	Portfolio Courses ENGR 520 and 521, 2 credits total	9 credits CS 503 or 6 credits CS 506	at least 36 credits (CS 603)
Responsible Conduct of Research Training	For details see Section 2.7.		
Total Graduate Credits	45	45	108

All programs of study submitted to the Graduate School must consist of at least 50% graduate stand-alone courses (numbered 500 and above); the remaining credits may be the 500 components of 400/500 “slash” courses.

All graduate students in Computer Science must achieve a B grade (or equivalent) in the following courses (or courses deemed equivalent to these courses by the program) and must be taken either prior to or during your graduate studies. Students may meet these requirements by taking equivalent grad-level classes.

- A. Theory of Computation (equivalent of CS 321)
- B. Analysis of Algorithms (equivalent of CS 325)
- C. Operating Systems (equivalent of CS 444) or Computer Architecture (equivalent of CS 472)
- D. Translators (equivalent of CS 480) or Programming Languages (equivalent of CS 381)

2.5 Minors

Computer Science Minor

To complete a graduate minor in CS, the student must complete:

- CS 515 or another graduate-level algorithms course with permission of the minor advisor.
- CS graduate courses or graduate courses cross-listed with CS graduate courses to meet the minimum credit requirement per degree:
 - Master minor requires 15 credits
 - Ph.D. minor requires 18 credits

The student must earn a cumulative, minimum GPA of 3.0 across all minor courses.

Electrical and Computer Engineering Minor

There are currently no specific requirements for an ECE minor. However, the 15 credits for a Master minor and 18 credits for a Ph.D. minor must be approved by the student's minor advisor who must be an ECE graduate faculty member.

2.6 Goal Sheets

A goal sheet is due in the first quarter of your degree and submitted to eeecs.gradinfo@oregonstate.edu. Blank goal sheets are emailed to students when they are due. Its purpose is to inform you of program deadlines and start a conversation between you and your advisor about courses and getting started on a project. If you do not yet have an advisor, you will be assigned a temporary advisor and will have the opportunity to learn about the graduate program from this temporary advisor and receive guidance on finding a major advisor. Failure to submit a first-term goal sheet will result in a hold on registering for courses until the review is completed.

The Graduate Program coordinator checks whether students have met their undergraduate breadth proficiencies (bottom of pages 7 and 8) based on their past transcripts and includes the missing requirements with their goal sheet for discussion with the major advisor.

2.7 Responsible Conduct of Research (RCR) Training

To complete your RCR training:

1. Go to: <https://www.citiprogram.org/index.cfm?pageID=154&icat=0&clear=1>
2. Select your Organization Affiliation: type in "Oregon State University".
3. On Step 7 for Question 1-4, mark "Not at this time;" for Question 5, mark "RCR for Engineers;" Question 6, mark "No".
4. Complete the training and email eeecs.gradinfo@oregonstate.edu a pdf of the certificate of completion.

M.Eng. students complete this or an equivalent training when taking ENGR 520 and 521.

2.8 Spring Academic Review (M.S. and Ph.D. only)

Every Spring quarter, all M.S. and Ph.D. students will submit a summary of their academic progress and goals. The student's advisor will review this and comment on the student's progress. It is recommended that students meet with their advisors to discuss their academic progress in person at this time. Students who are not making reasonable progress toward the degree (or do not have an advisor at the time of review) are identified and reviewed by the Graduate Student Progress Committee, and a minimum progress requirement is established for each of them. Students will receive a letter listing a set of actions that must be completed. Barring exceptional circumstances, a student who fails to complete the required actions will be dismissed from the graduate program. Failure to participate in the Spring Academic Review will result in a hold on registering for courses until the review is completed. Students on internship or leave during spring quarter will be required to complete a spring review before registering for classes upon return.

2.9 Progression in Coursework (M.Eng. only)

We expect our coursework-based master's students make steady progress in completing their coursework. The School of EECS requires that: Students complete at least two letter-graded or pass-fail didactic courses (non-blanket courses) every quarter until the coursework on their program of study is complete. Grades of S/U (satisfactory/unsatisfactory) in graduate or required prerequisites are not considered progress as they cannot count toward a degree.¹

If students do not meet this expectation, the School of EECS will issue a warning. Exceptions based on availability of courses or part-time studies should be sought a priori from the Associate School Head for Graduate Programs.

¹ Courses taken in Spring 2020 are an exception: with approval from their major advisor, students are allowed to use S-graded courses taken in Spring 2020 on their POS toward their degree.

2.10 GPA Requirements

The Graduate School requires a minimum grade point average (GPA) of 3.00 for:

- (a) all graduate courses taken at OSU as a graduate student, and
- (b) for courses included in the graduate program of study.

The courses on a student's program of study are those that are taken in order to satisfy your program requirements. However, all graduate courses a student takes while at OSU include any courses you take for personal interest and repeats of courses: at OSU, if a student repeats a course, only the grade in the second attempt contributes to their overall GPA. Grades on transfer courses will be included in the calculation of the program-of-study GPA but will not affect the GPA of courses taken at OSU. Both the overall GPA and program-of-study GPA must be above 3.0 before scheduling final oral or written exams (M.S. and Ph.D.) or beginning the portfolio completion class (M.Eng.).

Given this strict requirement, the School of EECS requires that students maintain a GPA of 3.00 throughout their degree. If a student's graduate GPA falls below 3.00, the School of EECS will issue a warning, and a study plan will be developed to raise the GPA above 3.00 in a timely manner. For M.Eng. students, the Graduate Coordinator or Associate School Head for Graduate Programs will meet with the student to develop this study plan. For M.S. and Ph.D. students, the major advisor will be consulted in the development of the study plan. Failure to meet the goals outlined in a study plan will result in immediate dismissal from the graduate program.

If a student's graduate GPA in a single quarter is below 3.00 but the overall GPA is above 3.00, the student (and their major advisor, if one is on record) will be informed, but no warning will be issued.

2.11 Selecting and Switching Major Advisors (M.S. and Ph.D. only)

Advisor selection

Depending on how a student is admitted to our M.S. or Ph.D. program, they may have an advisor of record from the start. If not, the student should identify an advisor as early in the first year as possible, so that the student can start taking research and project (blanket) credits to get started in research. To identify an advisor, we recommend:

- The student takes classes in their area of interest, as the faculty teaching this class will be a good point of contact for identifying an advisor;
- The student attends reading groups or seminars in their area of interest, which will help them get to know the faculty and graduate students in their area of interest; and,
- The student talks to prospective advisor(s) about how to find out about the research area and whether it is a good fit with the student's interests.

Once an advisor has been identified, the student simply emails the Graduate Program Coordinator eeecs.gradinfo@oregonstate.edu with the new advisor cc'd to notify the School of EECS of the new advisory relationship. Having an advisor is an important signal of academic progress. Not having a major advisor by the end of your second quarter (for M.S.) or third quarter (for Ph.D.) will result in dismissal from the M.S. or Ph.D. program. In exceptional circumstances, this deadline may be extended, but needs prior approval from the Associate Head for Graduate Programs.

Switching Advisors

Changing advisors is fairly common. Ideally, this comes from conversation between the student and their current advisor with the current advisor supporting the effort to identify a new advisor. However, situations are not always ideal, in which case the Graduate Coordinator, Associate School Head for Graduate Programs, or the Graduate Student Progress Committee will work to facilitate this process. A student or major advisor should notify the Associate School Head for Graduate Programs of the intent to change the advising relationship.

1. If the student has identified a new major advisor, then the student will email the Graduate Coordinator eeecs.gradinfo@oregonstate.edu. The School of EECS will notify the previous and new advisors confirming the change in responsibilities.
2. If a new major advisor has not been identified, then either the student or the previous advisor will email the Graduate Coordinator eeecs.gradinfo@oregonstate.edu. The School of EECS will notify the previous advisor confirming the change in responsibilities and the student regarding the process and timeline for identifying a new advisor. The Graduate Coordinator, Associate School Head for Graduate Programs, and/or the Graduate Student Progress Committee will work with the student to facilitate a transition to a new advisor; the earlier this facilitation can happen, the better. This may include mediating conversations with the previous advisor to understand reasons for the switch and to ensure that the student will have every chance to be

successful with a new advisor. However, the student is ultimately responsible for identifying a new advisor (see “Procedure for Selecting an Advisor”) by the end of the following academic term. In the absence of exceptional circumstances, not doing so may result in discontinued enrollment in the M.S. or Ph.D. program.

Results of formal exams and meetings (qualifiers, oral exams, program meetings) are respected through advisor changes: for example, if you pass your qualifier but later switch advisors, you do not need to retake the qualifier exam. A student’s committee may also be helpful during a transition to a new advisor.

2.12 Program Committee

A students’ committee, in consultation with the student, is responsible for preparing the student’s program, administering the required examinations, and reporting the student’s progress to the School. This committee has considerable freedom in defining the student’s program, being subject only to the rules of the Graduate School and the degree requirements listed in this guide. The student’s committee includes their major advisor and serve to provide broader guidance on your research.

The composition of a student’s program committee depends on the degree as follows:

M.Eng.	Three graduate faculty members in EECS. For students completing their M.Eng. degree with a portfolio, the committee is assigned by the School of EECS.
M.S. (project)	Three graduate faculty members: at least two in the major field and one may be from the graduate faculty at large.
M.S. (thesis)	Four graduate faculty members: at least two in the major field, one in the minor field if a minor is included, and a Graduate Council Representative (GCR). When a minor is not included, the fourth member may be from the graduate faculty at large.
Ph.D.	At least five faculty members: the major professor, at least two other members of the School of EECS who represent the student’s areas of study, a faculty member from the student’s minor department and/or other related departments, and a Graduate Council Representative (GCR).

A GCR will be chosen by the student from a list supplied by the Graduate School via this website:

<https://gradschool.oregonstate.edu/gcr-generate>

2.13 Program of Study

The program of study is a document that defines how you are fulfilling specific degree requirements and is approved by the members of your graduate committee. Programs of study are tentative and can be updated or changed. A hold will be placed on a student's account if they do not submit their program of study on time. The program of study must include the discipline-specific requirements given on pages 7 and 8. The program of study forms (paper or digital) are available from the Graduate School's website (<https://gradschool.oregonstate.edu/forms>). The Graduate Coordinator reviews all Programs of Study for accuracy and compliance. It is strongly recommended that you have the Graduate Coordinator review your Program of Study before submitting it to your major advisor or committee.

Master of Engineering students submit their programs of study to either the EECS Graduate Program Coordinator or in the Portfolio Preparation course (in their first quarter).

Master of Science students submit their program of study before the completion of 18 graduate credits (usually in the second quarter of study). The student fills out the Program of Study form and has it approved by their professor and all committee members (including a GCR for the thesis option) and turns in the form to the EECS Graduate Program Coordinator for the Associate School Head's approval.

2.13.1 Program of Study Meeting (Ph.D. only)

Doctoral students submit their program of study before the end of their fifth quarter as a Ph.D. student (or before the end of one calendar year if the student already has an M.S.) and at least six weeks before the student's preliminary exam. If a student changes degree to a Ph.D. degree, that term marks the first quarter in the five-quarter deadline. In order to submit a program of study, Ph.D. students must hold a meeting of their Program Committee to discuss and approve the selections on the program of study form. Schedule this meeting for at least 30 minutes (Section 3.3).

2.14 Changing degree programs

Once enrolled in our graduate programs, students can change degrees (e.g. from M.S. to Ph.D. or Ph.D. to M.S.) or add a concurrent degree (e.g. to get an M.S. on the way to a Ph.D.). A student requests such a change using this form: <https://gradschool.oregonstate.edu/forms#degree>

Such requests will be considered based on the student's current standing, likelihood of success in the new degree program, and the recommendation of the student's major advisor and committee.

Students switching to or adding an M.S. or Ph.D. must submit a new goal sheet (Section 2.6) when the degree change is requested. For transferring to the Ph.D., this requires discussion (with the advisor and the Associate Head of Graduate Programs) and agreement on reasonable deadlines for the qualifying exam and program of study based on how much time the student has spent in a master's program. When adding or changing to M.Eng. or M.S., the program of study form is due by the end of the term in which the degree change takes effect.

Students who switch from the M.S. or Ph.D. program into the M.Eng. program in their last quarter of study may request a short oral exam representing their work during their studies with the committee they formed for their M.S. or Ph.D. program. Students who switch from the M.S. or Ph.D. program into the M.Eng. program in their second-to-last quarter of study may request to waive the Portfolio Preparation, ENGR 520, requirement. These requests should be made at the time of submitting the new M.Eng. program of study.

2.15 Transferring credits from other universities

If you have taken graduate classes at a previous university, you may be able to use the credits towards your degree in EECS. To determine eligibility, fill out the transfer credit form, have your major advisor sign the form and then submit to the Graduate Program Coordinator via eecs.gradinfo@oregonstate.edu. The form is available, along with full transfer regulations, here: <https://gradschool.oregonstate.edu/forms#transfer>

We recommend doing this in your first quarter. It must be done before you submit your program of study.

After your transfer courses are approved, you may use these on your program of study to meet ECE and CS program requirements. At most 15 transfer credits may be used towards a master's degree. There is no limit for the Ph.D., except your residency requirement must be met (at least three quarters of full-time study). Your program committee must approve the use of transfer credits to meet ECE and CS program requirements. We recommend that, if you plan on using transfer credits towards your degree, you complete your program of study earlier, so that you can plan accordingly, as a program committee may not agree with a student's assumption about the suitability of prior study.

2.16 M.Eng. Portfolio

M.Eng. students, rather than completing their degree with an oral exam, are expected to complete their degree by preparing a portfolio of materials representing their work across their courses taken during their degree. Students do so through two courses: Introduction to Portfolio course (ENGR 520) ideally taken in the student's first quarter, and Portfolio Completion course (ENGR 521) taken in the student's final quarter. The portfolio is reviewed by members of the Graduate Curriculum Committee.

Students who fail to complete their degree in their planned last quarter but pass ENGR 521 with a C or better, may complete their degree in the next quarter without retaking the Portfolio Completion course. Students who fail the Portfolio Completion course (earn a C- or lower) will be asked to retake the course in the next quarter. Although ENGR 521 is offered during summer quarter, ECE and CS students may only register for the summer offering in the case of repeating the course.

2.17 M.S. Final Exam

The M.S. thesis option requires a written paper that represents a modest research contribution whereas the M.S. project option requires the student demonstrate good domain knowledge (ECE or CS) and a written paper that describes the project. Students enrolled in the CS Software Innovation Track complete a project that applies computer science to create a novel software system.

Both options require a final oral exam (scheduled for two hours in length). This may be scheduled only after all other requirements are satisfied, or in the quarter in which the remaining coursework will be completed (subject to the GPA requirements described earlier). All members of the student's committee must approve the scheduling of the final oral exam. A draft of the thesis or project report must be sent to all committee members at least two weeks before the oral exam. Announcements of oral exams are distributed to all faculty and graduate students at least one week prior to the exam by Graduate Program staff. Except in unusual circumstances, these exams will be held during the normal academic year (fall, winter, or spring quarters). Students must schedule their exams with the School of EECS and the Graduate School at least two weeks before the exam date. See Section 3.3 for how to schedule.

2.18 Ph.D. Exams

There are three major oral exams for the Ph.D.: the qualifier (which has a fixed deadline), the preliminary exam (which usually happens in the students second-to-last year), and the final oral exam or defense.

2.18.1 Qualifying Exam

The due date for a student's qualifying exam depends on their start date and whether they already have an M.S.:

Starting quarter	Qualifying exam deadline (no prior M.S.)	Qualifying exam deadline (prior M.S.)
Fall	November 15 of 3 rd year of study	November 15 of 2 nd year of study
Winter	February 15 of 3 rd year of study	February 15 of 2 nd year of study
Spring	May 15 of 3 rd year of study	May 15 of 2 nd year of study

The qualifying exam committee has the same composition as the program committee but does not require a Graduate Council Representative.

The student's advisor with the consultation of the committee assigns a research topic to the student one month in advance of the exam. The student submits a paper on the topic one week prior to the exam.

The paper may be based on:

- comprehensive review of existing literature in an area
- the student's current or prior original research
- or some combination as stipulated by the committee

The committee has the discretion to allow previously completed research papers, including jointly authored papers, if the student's contribution to the paper warrants such recognition. The intent of the paper requirement is to evaluate the student's skills to do Ph.D. level research, including the ability to perform a literature review, understand and synthesize research topics, conduct independent and collaborative research to the standards of the chosen discipline, and communicate the findings in a scholarly fashion. The student must present the paper to the committee and answer the committee's questions during the qualifying exam.

Subject questions (CS only): In addition to the above, CS students are asked to demonstrate mastery of subject matter. At least two weeks prior to the qualifying exam, the student's advisor assembles a set of topics or questions from the student's Ph.D. committee. The topics and the questions may be selected by the committee based on the student's course work and/or research area. Some of the questions may require written responses, in which case they should be completed within a week after the questions are given. Optionally, the committee might provide feedback on the student's written responses. The questions during the qualifying exam will be based on the topics and written questions given in advance.

After the exam the committee will have a confidential discussion on the performance of the student and make one of the following recommendations:

Computer Science	Electrical and Computer Engineering
<ul style="list-style-type: none"> • Pass • Fail research paper. If first attempt, allow retake of this part within 6 months. • Fail subject questions. If first attempt, allow retake of this part within 6 months. • Fail both parts. If first attempt, allow retake within 6 months. • Fail. Student is immediately dismissed from the Ph.D. program. 	<ul style="list-style-type: none"> • Pass • Fail. If first attempt, allow retake within 6 months. • Fail. Student is immediately dismissed from the Ph.D. program.

See Section 3.3 for how to schedule.

The top half of the Ph.D. Qualifying Exam Evaluation Form should be completed by the student prior to the qualifying exam. The completed, signed form should be returned to the EECS Grad Coordinator by the major advisor after the exam. The forms are available here: <https://eecs.oregonstate.edu/current-students/graduate/forms>

If a student does not attempt their qualifier by their due date, the attempt (whether a first or second attempt) will be considered a failed attempt. Requests for a change in due date as a result of exceptional circumstances should be made in advance to the Associate Head for Graduate Programs and will be considered by the Graduate Student Progress Committee.

Combining exams and transferring qualifying exams

Students who are completing concurrent degrees (M.S. and Ph.D.) can combine their Ph.D. qualifying exam with their M.S. oral defense with approval by their program committee(s). Students need to submit scheduling forms for both exams (even though they are held at the same time).

Students who are pursuing dual Ph.D.s. (such as Robotics and Computer Science) may hold a single qualifier exam to satisfy both degrees with the approval of their program committee(s). The qualifying exam must be deemed equivalent to the ECE or CS exam, and the ECE/CS qualifying exam form should be completed by the committee at the time of the exam. The student needs to submit a scheduling form for the CS or ECE exam, even if it is held at the same time as another exam.

Students who transfer into the ECE or CS Ph.D. program from another Ph.D. program (at OSU or at another university) who have completed an equivalent qualifying exam, may seek to have that exam transferred to the School of EECS with the approval of their program committee and the Associate Head for Graduate Programs.

2.18.2 Preliminary Exam

This exam is generally taken around the beginning of the third year with timing to allow the committee to have input on the proposed research. The purpose of the preliminary exam is to guarantee that the student has obtained sufficient breadth and depth of knowledge to carry out the proposed research.

This includes a thorough understanding of course work from the core areas on the student's program and of important articles in the thesis area. Once a student has passed their preliminary exam, they have **advanced to candidacy**.

The preliminary exam consists of:

- **A thesis proposal document (optional for ECE)** which should succinctly describe (a) the topic to be investigated, (b) the significance and relevance of this topic, (c) the approach and methods to be used in the investigation, (d) a discussion of the feasibility of the proposed research, (e) an annotated bibliography listing all relevant publications that have been or will be read by the student, and (f) a timetable for carrying out the research and completing the degree. The student should realize that this proposal is a plan. It is often the case that the actual completed research is substantially different from the proposed research. This document should be submitted to the committee at least three weeks prior to the oral examination and have already been approved by the student's major professor.
- **A 30-minute oral presentation** by the student on the day of the exam, presenting the proposed research.
- **A 90-minute oral examination** of the student by the committee.
- **In CS, an optional written exam.** Two weeks prior to the oral exam, the committee and the major professor may prepare a written exam for the student. This exam is normally open-book, and the student is given a week to complete it. The questions involve reading and analyzing an article, comparing a number of approaches, or other activities deemed appropriate by the committee. The student submits their completed written exam one week prior to the oral exam.

See Section 3.3 for how to schedule.

After the exam the committee will have a confidential discussion on the performance of the student and make one of the following recommendations:

- Pass
- Fail with retake allowed and a timeline given.
- Fail with no retake allowed; student is immediately dismissed from the Ph.D. program.

2.18.3 Final Exam

The student distributes a defensible copy of their thesis to their committee at least two weeks in advance. See for more information. The student presents their research in an open presentation and then defends their research by answering questions from the committee that focus on the presentation and thesis research in a closed session. See Section 3.3 for how to schedule.

3 Internships

While on an internship, students may (but do not have to) register for CS 510 or ECE 510, which is an internship blanket credit. Students in some cases may use the work during their internship toward their degree. M.S. and Ph.D. students should discuss this with their major advisor and committee. M.Eng. students should reflect on their internships in their Portfolio.

CS and ECE 510 are offered as on-campus and e-campus credits, which have different tuition and fees. Students should check current tuition and fee tables to decide which version is most suitable for them. International students should check with OIS that registering for e-campus courses will satisfy their visa requirements in a given quarter.

4 How To?

4.1 Receive scholarship money

If you have received a scholarship or fellowship that is paid through Oregon State University, it is paid to your student account. Scholarships should be posted by the end of the first week of classes and will have any charges deducted from the amount automatically. If you do not see your scholarship, please contact the Graduate Coordinator at eeecs.gradinfo@oregonstate.edu.

4.2 Access KEC and other campus spaces after hours

After access hours and access to the Kelley Engineering Center (KEC 1148) or other labs are granted through the main office in 1148 KEC. Students at the front desk of KEC 1148 or the Office Manager can assist you in gaining access.

4.3 Schedule a Meeting or Exam

Scheduling an exam is an important process to:

1. ensure graduation eligibility checks are made by the department and the Graduate School,
2. create and distribute the necessary paperwork to hold an exam, and
3. create an announcement for the public regarding your exam.

All exams except M.Eng. oral exams (30 minutes) are scheduled for 2 hours. All exams must be scheduled at least 2 weeks in advance of the exam date. First schedule your exam with the School of EECS via <http://register.eecs.oregonstate.edu/scheduler/views/>

To complete this form, you will need an agreed upon day and time for your exam from your committee, a title and an abstract. To find a time with your committee, we recommend first finding a few days or a week that is generally good for your committee members and then using an online poll (such as Doodle or WhenIsGood) to find a specific 2-hour block of time for the exam.

After scheduling exams with the School of EECS, the Graduate Program Coordinator will send information and directions for finalizing your exam with the Graduate School.

4.4 Register for a blanket or thesis credit

MEng students: To register for blanket credits (CS/ECE 501, 503, 505, 506) a student requires professor approval. Students must ask a professor to email approval to eeecs.gradinfo@oregonstate.edu

MS & PhD students: Students may register for blanket and thesis credits in their major advisor(s) section(s) without additional approval. Students should communicate with their advisor about their registration. If you are registering for blanket credits with a professor other than your major advisor, you should receive email approval from the professor and forward that email to eeecs.gradinfo@oregonstate.edu.

4.5 Obtain an override for a course

Undergraduate ECE or CS courses: If you wish to take an undergraduate course in the School of EECS, send an email request to eeecs.gradinfo@oregonstate.edu.

Graduate ECE or CS courses: If you need a prerequisite override or if a class is full, you will need an email of approval from the instructor of the course to receive an override to register for the course. If you have approval, forward the email to eeecs.gradinfo@oregonstate.edu

Other courses: Approval is handled by the unit that offers the course. Contact the person listed for that course in the schedule of classes.

4.6 S/U a course

S/U refers to the grading mode of “satisfactory/unsatisfactory” rather than the standard letter grade. Graduate students can opt for S/U grading by submitting the “Change of Grading Basis” form to the Registrar’s Office (<https://registrar.oregonstate.edu/forms>). Graduate students do not need signatures or approval on their form. Courses that receive an S or U grade are not allowed a student’s program of study and do not count towards a graduate degree.²

² Courses taken in Spring 2020 are an exception: with approval from their major advisor, students are allowed to use S-graded courses taken in Spring 2020 on their POS toward their degree.

5 Graduate Assistant Policies

Graduate Assistants (GAs) are covered by the CGE-OSU contract.³ This chapter serves to provide EECS-specific guidance to EECS GAs and Faculty. The Coalition of Graduate Employees (CGE), the union representing graduate employees, also provides resources to help navigate employment at OSU.⁴

Graduate Teaching Assistants receive training from OSU, the Graduate School, COE and e-campus. Graduate Research Assistants may receive specialized training to perform their job (for example Human Subjects Research or OSHA training). This training and any additional training that may be required is considered part of a GA's employment.

The supervisor for GTAs in the School of EECS is usually the Associate Head for Graduate Programs. GTAs that are assigned to be the instructor of record for a class may have a different supervisor. However, each GTA works most closely with the faculty to whose class they are assigned, and the assigned faculty assumes responsibility for delegation of tasks and evaluation of work. Students are hired as GTAs if they are in good academic standing and based on instructional need. Students who are on internship are generally not hired as GTAs.

The supervisor for a GRA is often the student's major advisor, but may be another university employee, depending on the nature of the work assigned.

5.1 Time Management

While students are usually appointed as a Graduate Assistant for 9 months from September 15 to June 15, their work assignments may change from quarter to quarter. Graduate appointments for Fall, Winter, Spring, and Summer quarters begin on September 16, December 16, March 16, and June 16, respectively, and each appointment quarter is 13 weeks long. The School of EECS recognizes that the work of a GTA assignment for Winter quarter (for example, final exam grading) may extend past March 16 (i.e., the start of Spring quarter appointment period). However, the expectation of the School is that as long as a student has Graduate Assistant appointment for Spring quarter, they will not be asked to start work for their Spring quarter assignment until tasks relating to their Winter GTA assignment are complete, generally through the end of final exam week of Winter quarter. A Winter-quarter GTA without a spring graduate assistantship should consult with their supervisor to ensure they only work until March 15.

Some work assignments may require substantial time during critical periods (e.g. during midterm grading or meeting a research deadline); however, the number of hours a student may work per week is regulated by their appointment fraction, the CGE-OSU contract, and Federal regulations (particularly for International students):

³ <https://hr.oregonstate.edu/employees/administrators-supervisors/graduate-employee-cge-contract-resources>

⁴ <https://www.cge6069.org/>

- A 0.25 FTE appointment corresponds to an average of 10 hours per week; a 0.3 FTE appointment corresponds to an average of 12 hours per week; and, 0.49 FTE appointment corresponds to an average of 19.6 hours per week.
- “[H]ours shall not fluctuate more than 50% above the weekly average in any one work week throughout the course of the employment period, unless by mutual agreement between the supervisor and the employee.” (Article 11, Section 3 of the CGE-OSU contract)
- The time before and after the academic quarter starts and finishes cannot be redistributed over the weeks of academic quarter. (Article 11, Section 3 of the CGE-OSU contract)
- International students on F1 or J1 visas may not work more than 20 hours in any week during an academic term: <https://international.oregonstate.edu/ois/employment>

Hour Tracking

It is important to keep track of hours worked because it can be useful in resolving disputes related to time management, and it can help the School determine the appropriate number of GTAs to assign to each course. CGE provides a template for tracking hours.⁵

Leave Time

GAs observe the holidays recognized by the university⁶ and are entitled to 15 days of leave time without loss of pay during the academic year (Article 10, Section 7 of the CGE-OSU contract). A GA must request this leave time in writing from their supervisor “sufficiently in advance [to] allow for planning for the absence.” For GTAs, we recommend two weeks lead time for leave between quarters and two months lead time for leave during quarter. Except in exceptional circumstances, leave for a GTA is unlikely to be approved for an absence in week 1, exam week or for more than a few days during the academic quarter. Any additional schedule adjustments should be arranged between the GA and the faculty to whom they are assigned.

GAs also have sick leave benefits (Article 30 of the CGE-OSU contract). GTAs who are unable to complete their tasks for a given week due to illness or emergency must inform the faculty to whom they are assigned and log the hours not worked in EmpCenter: <http://mytime.oregonstate.edu/>. Estimate the number of hours you were unable to work and log these hours as “sick leave” on the days that you were ill.

Weekend work and work turnaround

Weekend work is not prohibited, but in the School of EECS, we recommend not requiring it, unless unavoidable (for example, to run timed experiments or to schedule laboratory access). It is fine for a GA to opt to work on the weekend (e.g. holding office hours, if appropriate for the class). The assigned

⁵ <https://www.cge6069.org/resources/workload/>

⁶ <https://hr.oregonstate.edu/benefits/current-employees/time-holidays-protected-leaves/holiday-schedule>

faculty should keep in mind that GAs are full time students registered for 12 credits and should allow flexibility in the work schedule so that GAs can work around their academic schedule. To this end, for GTAs, we recommend a grading turnaround no shorter than 2 business days. Further, assigned duties should not be compressed in the week; for example, you should not require that a GA (all of whom are part-time workers) complete their full week of work within 2 days, as they may have classes, midterms, or assignments due.

Work toward my GRA employment or toward my thesis?

GTAs have a much cleaner delineation between their employment and their studies. GRAs may be assigned to do work that is difficult to distinguish from their thesis or research-credit work. If there is a grievance related to workload, it will be important to distinguish the amount of time spent toward each effort. If it is impossible to distinguish between these, one can use the number of research or thesis credits enrolled in as a guideline: each credit is considered 3-4 hours of effort.

5.2 Feedback to GAs

Feedback is important, especially at the beginning of a job. Early and frequent feedback (highlighting both the things that are going well and the things that need improvement) will help clarify expectations. Therefore, faculty are encouraged to meet with their GAs early and regularly to set clear expectations and let them know if they are straying. It is great to meet in person or by telecom, but we recommend following up with email to help overcome any communication barriers and remove any uncertainty that may arise from a face-to-face meeting. Formal evaluations of GAs are required by the CGE-OSU contract (Article 15) every year.

Expectations and Progressive Discipline

If a GA is not meeting work expectations, then principles of progressive discipline must be followed, and at each stage, the GA should be given opportunity and guidance to improve.

To begin, expectations must be set. Expectations must be measurable and are best communicated (or reiterated) in writing (email or group messenger) and receive confirmation from the GA. Progressive discipline begins when a GA does not meet expectations or require reminders. Reminders should be in writing and receive confirmation from the GA. When reminders do not bring improvement, the supervisor or assigned faculty should involve the Associate Head for Graduate Programs to move through the next stages of progressive discipline, as needed:

- 1) Issuing a written reprimand to the GA and have a meeting with the Associate Head for Graduate Programs.
- 2) Reassignment of duties.
- 3) Reduction of duties (i.e. lowering FTE).
- 4) Suspension without pay.
- 5) Dismissal

Steps may be skipped, but progressing beyond step 2 requires the involvement of HR.

Evaluation of GTAs

In EECS, faculty are asked to evaluate all GTAs assigned to their courses at the end of every quarter on whether they meet the following criteria:

- possessed, demonstrated or showed the ability to learn the technical and academic content necessary to answer student questions, competently grade, and perform other duties for this particular class; and
- performed tasks on time, responded quickly and professionally to emails and other communications, showed up to meetings and office hours on time, and acted ethically, fairly and consistently.

Standards by which expectations are set (such as grading turnarounds) should be what will help all of EECS, not just a particular course. Evaluating a GTA as “meets expectations” when the GTA doesn’t is counter to professional development and the needs of the School.

At the end of the academic year, this feedback will be summarized in an evaluation letter and made available to the GTA. GTAs who do not meet expectations in one or both aspects will be informed in writing with constructive criticism and a plan for improving performance as soon as possible, ideally before the start of a new academic quarter. If a GTA continues to underperform, despite notice and progressive and commensurate intervention, the GTA’s contract may be suspended or the student may become ineligible for a GTA position in the future. Students may refute any charges and may seek the support of Union representatives. Refer to Article 17 of the CGE-OSU contract for details. Above all else, the aim is to improve the performance of our GTAs so that our classes run smoothly and the educational experience for both undergraduate and graduate students is a positive one.

Evaluation of GRAs

GRAs who are supervised by their major advisor are evaluated as part of Spring Review.

5.3 Feedback to Faculty: From Improvements to Grievances

GAs should inform their assigned faculty if they are unable to perform their assigned tasks, for example, if:

- the amount of work assigned requires more than their contractual obligation; or,
- the GA does not have the knowledge to complete the assigned tasks.

It is recommended that the GA talk directly with their assigned faculty about such issues. If this does not resolve the issue or the GA does not feel comfortable broaching the issue with their assigned faculty, the GA should contact the Associate Head for Graduate Programs. The Associate Head for Graduate Programs will mediate communication between GAs and faculty to determine necessary actions to help resolve the issue.

GTAs in particular play an important role in courses, as they interact with students and evaluate them. Furthermore, GTAs execute the tasks assigned by the faculty they are assigned to. Therefore, it is

important that GTAs provide feedback to faculty, if they feel the need to. It is also important that faculty ask for feedback about the course from the GTAs. Feedback may include (but is not limited to):

- the amount of time that assigned tasks take to be completed,
- suggestions on how to improve the quality and structure of the course, and
- suggestions on how to improve the course evaluations.

Faculty and GTAs should agree on the best mechanism for GTAs to share their feedback (e.g., via email or in-person meetings).

6 Teaching with GTA support

This chapter provides guidance and policy for courses that have GTA support.

6.1 Course and GTA Organization

Courses can be designed to more effectively incorporate work from GTAs:

Frontloading Work

Preparation activities to be an effective GTA should be started as soon as possible once the appointment begins. This involves reviewing the lecture material, preparing and testing labs and assignments, and other activities requested by the course faculty. Providing startup tasks to GTAs can allow GTAs to front-load work before they start their own courses.

Courses should be designed with assessment in mind

The amount of feedback a GTA can give is proportional to the amount of time they're given on a per-assignment basis when grading. Automating repetitive, quantitative portions will allow GTAs to focus their time on providing more valuable, qualitative feedback.

Define tasks/schedule at beginning of term

Well-defined work schedules aid GTAs in balancing their time, relative to scholarly activities. GTAs should be given an idea of their work assignments throughout the term up front to assist with planning. To this end, a document clarifying faculty expectations for GTAs, and their responsibilities (e.g., grading, material-related, and otherwise) should be provided at the start of their assignment (the 16th of the month before the start of a quarter).⁷

Effective distribution of tasks among TAs

From a resource-expenditure point of view, GTAs should be assigned where they are most valuable. More experienced GTAs will require less time grading and will be more valuable to students for office hours. They may also be interested in developing tools to streamline their tasks or have suggestions for

⁷ See these examples of GTA duties for a specific classes, including pre-term activities:

<https://docs.google.com/document/d/1CUo4o3xYc-Q8ZK-PP55qOAVb2yiBKpubOvLV5r1nurk/edit>

new subject explorations for the students. Less experienced GTAs may have difficulty with office hours until they fully understand the material - but they may be helpful in helping designing learning activities (since they themselves are still learning the materials).

GTA Communication Planning

Mechanisms for communication between GTAs and students should be established in the course syllabus. Ideally, GTA preferences can be taken into account. For example, Canvas Inbox may be used if GTAs do not want their email addresses published. Slack may also be used if that is set up for the course.

For Faculty/GTA communication, the following is recommended:

- an email at the beginning of the quarter detailing duties/timelines (see “Define tasks/schedule...” above);
- a meeting before or at the start of quarter to have everyone get to know each other, to establish a working relationship and learn about capabilities/preferences, and establish office hours (See “Effective distribution...” above);
- establishing an open communication among the instruction team will help solve issues before they become problems;
- regular (weekly or bi-weekly) check-in meetings for conversations about grading issues, student conceptual gaps, GTA conceptual gaps, suggestions for supplemental explorations, status on development of explorations, etc.;
- an end-of-term meeting where the term's work is discussed prior to final grade-posting.

6.2 Suitable GTA Duties

The most critical duty of a GTA is to know the material for the class they are assigned. GTAs will start their assignment one to four weeks before the beginning of the term so it is imperative that the GTA has access to the syllabus so they can determine any deficiencies and learn the material.

Duties of a GTA may include:

- Holding office hours either on campus (face-to-face) or online via web conferencing.
- Testing and grading both written and programming assignments. (GTAs will need to learn any software used to grade programming assignments.)
- Preparing solutions to homework assignments.
- Grading quizzes and exams either on paper or online using Canvas speedgrader.
- Providing meaningful feedback to students.
- Entering grades into Canvas gradebook.

- Promptly answering students' questions on grading via email or other communication platforms.
- Testing and proctoring midterms and final exams.
- Holding help and review sessions.
- Assisting with in-class activities.

For some courses, GTAs will be responsible for labs and/or recitations sections of the course. GTAs may need to create lab materials to present weekly to a small section of students.

A more experienced GTA may be given more advanced duties for the course, such as:

- Designing new quizzes and homework assignments.
- Generating grading rubrics.
- Giving a guest lecture or creating a PowerPoint presentation.
- Updating the course website.
- Meeting with small groups of students to review projects.
- Creating active learning modules.

For large classes with many GTAs, a lead GTA may be identified who will primarily manage the other TAs for a course and may have duties such as:

- Manage GTAs.
 - Ensure grading is done on time and correctly.
 - Organize office hours/meetings.
 - Handle grading rubric standardization (for consistency).
- Filter/Handle extension requests before they get to the faculty.
- Filter/Handle grading disputes before they get to the faculty.
- Assist faculty with collecting evidence for academic misconduct cases.⁸

GTAs for E-campus courses may have some different responsibilities such as:

- Checking discussion boards.

⁸ <https://studentlife.oregonstate.edu/studentconduct/academicmisconduct-faculty>

- Creating videos.
- Holding a Q&A via Slack or other communication platform.

The duties of a GTA for any given course should be given in written form before the first day of class along with the due dates for grading and exams, with the understanding that adjustments may need to occur as the course progresses.

6.3 COI Avoidance Policy for Grading TAs

Students should not be put in a position where they are grading their acquaintances' and work. This risk is higher when TAs (teaching/technical assistants) are "near peers" to students in their classes. The policy in this section addresses the case when an Undergraduate Learning Assistant's (ULA's) assignment involves grading or when a Graduate Teaching Assistant's (GTA's) assignment involves grading another graduate students' work. However, these recommendations are intended as best practices for any ULA or GTA assignment.

- 1 Instructors should require all GTAs and ULAs to identify students registered in the class with whom they have a **real or perceived conflict of interest** at the start of the quarter. The instructor should grade these students' work or assign the grading of these students to another GTA or ULA. If possible, as an alternative, submissions can be anonymized prior to grading.
- 2 The instructor of record must provide clear grading rubrics to GTAs and ULAs.
- 3 The instructor of record should spot check grading and *must* spot-check any grading that is subjective.
- 4 The instructor of record must review all failing grades on assignments and tests.
- 5 Appeals of grades must be directed to the instructor of record.

Note that all ULAs and GTAs undergo FERPA and Teaching Assistant training (with COE, Graduate School, and/or e-Campus) as a condition of their employment.

What is a real or perceived conflict of interest?

Consider this in terms of whether someone else (such as another student) could suspect that you might be biased positively, or negatively, when grading a particular student. This could arise if you are grading work by a friend, roommate, significant other, relative, member of your sports team, etc. Think in terms of the perception. You may believe that "you can be 100% objective when grading my roommate Cynthia's assignment," and you might be right - but another student, Fred, might feel that something unfair is going on if Cynthia gets a high grade on the assignment. Alternatively, Cynthia might worry that her low grade was because you're upset that she waits days before washing her dirty dishes. Aim to avoid perceived conflicts, as well as real conflicts. The easiest way is to have another GTA or ULA or the instructor grade any students with whom you could have a conflict.