

Electrical and Computer Engineering Graduate Program Handbook



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Welcome to ECE!

Welcome to the Department of Electrical and Computer Engineering at the University of Massachusetts Amherst! We are thrilled that you have chosen to pursue your graduate studies with us. This handbook provides you with essential information about our department's regulations and policies for the ECE graduate program. It is important that you carefully review this booklet, along with the <u>Graduate School Bulletin</u> and the <u>Graduate School Handbook</u>.

Our aim is to support you throughout your program, so if you have any questions or concerns, please do not hesitate to reach out to your faculty advisor; or Emily Krems, Academic Advisor (ekrems@umass.edu); Eliza Frasier, Academic Program Manager (e.frasier@umass.edu); or Wayne Burleson, Graduate Program Director (burleson@umass.edu). Remember, it is your responsibility to adhere to the guidelines set by the Graduate School and the Department.

We wish you great success in your studies!



New Students Checklist

There are a number of steps that new M.S. and Ph.D. students should take after arriving to campus, including:

- ✓ International students are required to check in with the Global Affairs Office (also known as IPO). Students should check their emails for details on the check-in process. Helpful resources can be found <u>here</u>.
- ✓ Students will need to obtain a "UCard" campus ID from Whitmore Room 168. More details are on the <u>UCard website</u>.
- ✓ Once students have received a "NetID" and password from <u>UMass IT</u> (Information Technologies), they should log into SPIRE (<u>www.spire.umass.edu</u>) and update their personal information as needed, so that class rosters and other important documents list the correct information.
- ✓ For students receiving a stipend, it is important to make sure that the necessary documentation has been signed in SPIRE. If no forms have been signed, students should reach out to their advisor. For information on graduate employment, students can visit the <u>HR website</u>.
- ✓ Students should work on their Study Plan (links below), checking in with their faculty advisors to finalize courses for the semester.
- ✓ Students are required to register for the ECE seminar course (ECE 793A for fall, ECE 794 for spring) more information is provided below, including exceptions.
- ✓ If starting in the fall, students should plan to attend the New Student Orientation (details will be emailed over the summer). If starting in the spring, students should visit the Academic Programs Office in Marcus 210 for important information.

The Graduate School also has a <u>New Graduate Student Checklist</u> that is very useful to incoming students.

M.S. requirements

NON-THESIS OPTION: Graduate students who are enrolled in the M.S. non-thesis option must earn a minimum of 30 credits.

A. 7 courses must be in ECE (minimum 21 credits). (CMPSI 677 AND CMPSI 611 may be considered as ECE courses for this requirement)

B. 7 courses at 600 level or higher (minimum 21 credits).

C. Up to 3 courses from: a) ECE 500 level, and/or b) outside ECE 400 or 500 level.

D. At most 6 credits of 400 level courses (outside the major field)

E. Only one (1) approved independent study course (either ECE 696 or from outside ECE), with a maximum of 3 credits.

F. Registration for a one credit seminar course (ECE 793A-Fall and 794-Spring) is MANDATORY, but this credit does not count toward total credit requirements. Exceptions to this requirement are outlined below.

G. Credits transferred from another institution cannot be used to satisfy the university's requirement for graded credits nor the 600-800 course level requirement. Graduate courses from another institution which have been applied toward any baccalaureate or advanced degree may not be used for fulfilling requirements for any other Master's degree at the university.

H. ECE 698 does not count towards degree requirements.

THESIS OPTION: Graduate students who are enrolled in the M.S. thesis option must take and pass a minimum of seven (7) graduate courses and earn a minimum of nine (9) thesis credits (ECE 699). These 7 graduate courses must meet the following requirements:

A. A minimum of five (5) courses (at least 15 credits) at the ECE 6xx level or higher (CMPSI 677 AND CMPSI 611 may be considered as ECE courses for this requirement).

B. Up to two (2) courses from ECE 5xx level and/or from non-ECE 4xx/5xx levels.

C. Only one (1) approved independent study course (either ECE 696 or from outside ECE), with a maximum of 3 credits.

D. Registration for a one (1) credit seminar course (ECE 793A-Fall and ECE 794-Spring) is MANDATORY for graduation, but this course does not count towards total credit for degree

requirements. Exceptions to this requirement are outlined below.

E. Credits transferred from another institution cannot be used to satisfy the university's requirements for graded credits nor the 600-800 course level requirements. Graduate courses from another institution which have been applied toward any baccalaureate or degree may not be used for fulfilling requirements for any other Master's degree at the university.

F. Thesis Credit: A Master's with Thesis degree candidate must register for nine (9) Master's Thesis credits, ECE 699. These credits do NOT count toward the 600 level course degree requirement.

G. Thesis Committee: Preparation of the Master's thesis shall be under the direct supervision of a Thesis Committee. That committee shall consist of 3 faculty members from the student's major program. Only on rare occasions are committee members appointed outside of UMass 5-college campus subject to the appointment of those faculty as graduate faculty status. To initiate this process the following must be submitted to the ECE Academic Programs Office: 1) a letter of support from the student's faculty advisor with strong justification; 2) curriculum vitae of outside faculty member. To appoint a nonvoting outside member, a curriculum vitae is needed. The committee must be nominated prior to the presentation of the M.S. Thesis Outline/Proposal. A thesis committee has been officially constituted when the Graduate Dean sends formal notification of its formation to all members, to the Graduate Program Director (GPD), and to the student. Members of the Thesis Committee must agree to not only assist in the supervision of the thesis project, but also to attend the thesis defense. Selection of the committee is a matter of "academic judgment," which should be made by the Graduate Program Director and the Department Chair and approved by the Graduate Dean. Please remember that most faculty are on a 9month contract and do not assume that committee members will be available during the summer months.

H. Thesis Outline/Proposal: A master's candidate must prepare a suitable thesis outline/proposal to be approved and signed (on the cover sheet) by each member of the Thesis Committee and the Department Head. The signed (by all committee members) thesis outline cover sheet must be submitted to the Academic Programs Office for departmental approval a minimum of four (4) months prior to the date that the final thesis defense will be scheduled.

I. Thesis Defense: A typical M.S. thesis program is two years. An oral thesis defense (final defense) must be scheduled by the student and announced to the Academic Programs Office at least one week before the defense date. The result of the Thesis Defense must be sent immediately following the defense to the Academic Programs Office by the Committee

Chair, and the student is required to submit a prepared thesis cover sheet to the Academic Programs Office. The Academic Programs Office will obtain approvals and signatures from the committee members and Department Head. The completed form will be submitted to the Graduate School with the student cc'd, and a copy will be kept in the student's file.

J. Master's Thesis: The student is required to electronically submit the final thesis through the University of Massachusetts Amherst <u>ScholarWorks</u> website. The Graduate School has instructions for this process in the <u>Graduate School handbook</u>.

Language requirement: Not required

General Examination: Not required

Degree Eligibility Form: The Degree Eligibility Form must be completed by all Master's degree candidates and submitted to the Academic Programs Office to be approved/signed by the Graduate Program Director and the Department Head. The graduate student should verify the accuracy of the information on this form from his/her records (see SPIRE). The completed form, with appropriate fees & signatures, must be received by the Graduate School by the posted deadline for the intended graduation date. These deadlines are strictly observed and will not be extended. Degrees CANNOT be awarded retroactively. You must complete the student portion of this form and submit it to the Academic Programs Office at least three (3) days IN ADVANCE of the deadline for verification and signatures. It will then be forwarded to the Graduate School where it will be held until your degree work is complete.

NOTE: The M.S. <u>thesis</u> and <u>non-thesis</u> Degree Eligibility Forms are located on the Graduate School's website.

A minimum of 3.00 GPA is required to be eligible for graduation by the Graduate School. Degrees are issued approximately two months after the graduation deadline. If you require a verification of degree eligibility, please send an email request to Eliza Frasier, ECE Academic Programs Manager, at <u>e.frasier@umass.edu</u>. Our department may provide you with a temporary certificate, depending on your circumstances.

Accelerated (4+1) Master's Program

Eligibility

The five-year BS/MS program in Electrical and Computer Engineering is open to all undergraduate students at UMass Amherst who are enrolled as majors in Electrical Engineering or Computer Engineering and who meet the necessary GPA requirements*. For the GPA requirements, the cumulative GPA, usually at the end of the third year (i.e., including all required 300-level ECE courses) is used. Based on this GPA, eligibility for the five-year program is determined as follows:

A. GPA \geq 3.5: Automatic admission to five-year program (no letters or reference or personal statement required)

B. 3.5> GPA \ge 3.3: Admission to five-year program based on committee review. C. GPA < 3.3: Not eligible for five-year program, but application to M.S. program through the regular admission process is possible. Students may also wait until their GPA is above 3.3 to apply.

All admissions into the five-year B.S./M.S. program are conditional. Specifically, admitted students are required to complete their B.S. degree with a cumulative GPA of 3.3 or higher. * Rules are subject to change.

Requirements

All requirements for the M.S. thesis or non-thesis apply to students in the 4+1 program. To complete all the required courses for the B.S. and M.S. degrees within five years, several adjustments to the B.S. degree schedule are necessary. The main changes are:

A. During the first four years (typically the senior year), one or two additional graduate-level courses (3 or 4 credits) are taken that are later transferred into the M.S. program.

B. Two graduate-level courses can be counted toward both the B.S. and M.S. degrees, provided that they are ECE courses at the 500-level or above. Thus, up to four courses may be transferred from the undergraduate program. **However, only three may be 500-level, at least one 600-level ECE course is required in order to transfer four courses.**

C. During the fifth year, 6 to 8 graduate courses (3 or 4 credits) are taken in the M.S. program (depending on how many courses were successfully transferred).

It might be necessary to shift some electives or General Education courses to make room for the additional graduate courses necessary for finishing the M.S. degree in one year.

Summer or winter courses, or credit overloads, might also be needed to create space needed for extra courses. Participants in the five-year program will be advised on an individual basis to ensure that their academic plan meets the necessary requirements.

M.S. Study Plan

M.S. students are required to complete the <u>M.S. Study Plan</u> each semester that they are enrolled in courses. Students will indicate on the form the courses they have taken (along with their grades) and the courses they plan to take. Students will need their faculty advisor's input and approval. Faculty advisors can be contacted by email to set up a meeting in person (or if necessary by Zoom). Signed M.S. Study Plans must be emailed before the end of Add/Drop to Eliza Frasier at <u>e.frasier@umass.edu</u>.

M.S. Concentrations

Students have the option of selecting an <u>area of concentration</u> as a way of defining a theme in their coursework. Concentrations are an academic credential which appear on the transcript. Students completing the concentration will take five or six (depending on the concentration) approved courses as part of satisfying the requirements of the ECE department's existing Master's program.



ECE Fall 2025 "Cultural Celebration" Tea Time event

Ph.D. requirements

The ECE program has the following requirements:

1. Registration for a one credit seminar course (ECE 793A-Fall & ECE 794-Spring) is MANDATORY for all students registered for course credits. Exceptions to this requirement are outlined below. This seminar credit does not count toward degree eligibility requirements.

2. Residency Requirements: A doctoral candidate must spend the equivalent of at least one academic year of full-time graduate work (minimum 9 credits per semester – no exceptions) in residence at the University. The residency year must be either a Fall/Spring or Spring/Fall sequence. During this year, the student must spend some part of each week physically on campus.

3. Language Requirement: Not required by the ECE program, however the Graduate School has <u>baseline requirements</u> for international students applying to the Ph.D. program.

4. Preliminary Comprehensive Examination: The Preliminary Comprehensive Exam consists of two (2) parts: (1) The Core Requirement, including the four-course core curriculum in residence (see "Ph.D. Comprehensive Examination Policy"); (2) Research Qualifying Exam, including documentation and presentation of a research project involving the formation of a four (4) member committee; submission of documentation and an oral presentation (see the next section, "Ph.D. Preliminary Comprehensive Examination"). Both requirements should be completed by the end of the second year. The result of the Research Qualifying Examination (RQE) is e-mailed to the Academic Programs Office by the student's faculty advisor.

5. Doctoral Dissertation Committee: Within one year after the student has completed all core requirements and passed the Research Qualifying Exam (the Preliminary Comprehensive Exam), the Doctoral Dissertation Committee is formed by the student and nominated to the Graduate Program Director by the student's proposed Committee Chair.

From the university's <u>Graduate Student Handbook</u>: The dissertation committee is composed of at least three (3) graduate faculty members; the chairperson, one other member from the candidate's department, and one member from outside the candidate's department. (On rare occasions, committee members are appointed outside of UMass 5college campus. Note: To appoint a non-voting outside member, a curriculum vitae is needed.) Members of the Dissertation Committee must agree to not only assist in the supervision of the dissertation project, but also conduct (be present at) the Final Oral Examination (Final Dissertation Defense). Students should remember that most faculty are on a 9-month contract and should not assume that committee members will be available during the summer months. The Graduate Dean makes the official committee appointment. The committee is officially constituted when the Graduate Dean sends formal notification (letters) of its formation to each committee member, the Graduate Program Director, and to the student.

6. Dissertation Credit Requirement: The total number of dissertation credits (ECE 899) required are 18 credits. There is no maximum number of dissertation credits to which a student is limited; however, a student can register for only a maximum of nine (9) dissertation credits per semester. Doctoral candidates will not be recommended to the Board of Trustees for graduation unless they have the requisite minimum number of dissertation credits (18) and have met all degree requirements.

7. Dissertation Prospectus/Outline: After completing the core requirements and passing the Research Qualifying Exam (passing the Preliminary Comprehensive Examination), within two more years the graduate student must prepare a dissertation prospectus/outline describing the research to be conducted, analyzed, and presented in the dissertation. The cover sheet must be signed by each member of the Dissertation Committee to indicate approval of the topic and its plan of execution. The prospectus/outline signed cover sheet must be received by the Graduate School at least seven (7) months prior to the Final Oral Examination/Dissertation defense.

8. Announcement of Final Oral Dissertation Defense: At least seven (7) months following the presentation of the dissertation outline, the student must schedule the final oral dissertation defense in consultation with his/her committee chair. Notice by email must be sent to the Graduate Program Director by the Committee Chair at least 5 weeks in advance of the defense date. Written notification of the scheduling of a Final Ph.D. Oral Defense must be sent to the Graduate School by the Graduate Program Director no less than four (4) weeks prior to the date of the defense. All members of the Dissertation Committee must be present at the defense. An examination/defense cannot be held unless it has been publicly announced by the Graduate School.

9. Final Oral Dissertation Defense Results: The result of the Dissertation Defense must be sent immediately following the defense to the Academic Programs Office by the Committee Chair, and the student is required to submit a prepared dissertation cover sheet to the Academic Programs Office. The Academic Programs Office will obtain approvals and signatures from the committee members and Department Head. The completed form will be submitted to the Graduate School with the student cc'd, and a copy will be kept in the student's file.

10. Dissertation: The dissertation must prepared according to the Graduate School's <u>Doctoral Paperwork Requirements</u>. Further instructions are provided on the Graduate School's <u>Doctoral Dissertation Submission</u> portion of the handbook. The final dissertation must be submitted to <u>ScholarWorks</u>. The Graduate School is the final and only arbiter of what is an acceptable dissertation.

11. Degree Eligibility Form: The Ph.D. Degree Eligibility Form is available online in the <u>Graduate School's handbook</u>. The form must be completed by all doctoral degree candidates and submitted to the ECE Academic Programs Office for signature/approval by the Graduate Program Director and the Department Head according to the <u>deadlines</u> posted by the Graduate School. The completed form will be sent to the Graduate School by the ECE Academic Programs Office following approvals with the student cc'd, and a copy will be kept in the student's file. These deadlines are strictly observed and will not be extended. Degrees cannot and will not be awarded retroactively.

Ph.D. Study Plan

Ph.D. students are required to complete the <u>Ph.D. Study Plan</u> each semester that they are enrolled in courses. Students will indicate on the form the courses they have taken (along with their grades) and the courses they plan to take. Students will need their faculty advisor's input and approval. Faculty advisors can be contacted by email to set up a meeting in person (or if necessary by Zoom). Signed Ph.D. Study Plans must be emailed before the end of Add/Drop to Eliza Frasier at <u>e.frasier@umass.edu</u>. Ph.D. students must submit a new Study Plan form with Funding, Internships, Core courses and RQE progress.



ECE Fall 2025 Tea Time event

Ph.D. Preliminary Comprehensive Examination

There are two parts to the Ph.D. Preliminary Comprehensive Examination. A student must successfully pass both parts, Core Courses and Research Qualifying Exam (RQE) to pass the Examination.

I. Core Course Requirement

In coordination with and under approval of their advisor, the student must take four courses from the list of department-approved core courses.

A. Core Course Choices

1. ECE 603: Probability and Random Processes

2. ECE 606: Electromagnetic Field Theory

3. ECE 609: Semiconductor Devices

4. ECE 608: Signal Theory, OR ECE 604: Linear Systems: No more than one of these two will count.

- 5. ECE 658: VLSI Design Principles
- 6. ECE 665: Computer Algorithms
- 7. ECE 668: Computer Architecture

8. COMPSCI 677: Operating Systems, OR ECE 671: Networking: No more than one of these two will count.

Notes:

1. Each of the ten courses above will be offered once per year.

2. The student must complete the core requirement within 24 months of entry into the program. The core course 24-month requirement can be relaxed by 6 months at the request of the research adviser.

B. GPA and Grade requirements

1. The student must obtain an average grade of 3.47/4.0 or better for the four courses. In calculating this average grade, all courses are weighed equally, regardless of the actual number of credits assigned to them, and

2. A grade of at least B must have been obtained in each of these courses.

NOTE: There will be no exceptions granted (example: taking a similar course at another university does not result in an exemption).

C. Completion of a core course (or multiple core courses) at UMass Amherst with the required grade (minimum "B") as part of another degree

1. Such course/courses can be counted toward the core with the grade counting towards the 3.47 required GPA in the core.

2. For each such course, the student must take another 600-level course or a 700 level course either inside or outside the ECE department. These must be taken while in residence.

3. Each such course must be approved in writing for inclusion in the core requirement by the student's faculty advisor. The student need only have a C or better in these substitute courses.

II. Research Qualifying Exam (RQE)

Every Ph.D. student must complete the Research Qualifying Exam in the first 24 months, with a possible 6 month extension request from advisor. This will consist of a written RQE document (four pages in length, two columns) and oral presentation of a research project performed under the direction of the student's advisor. The purpose of the Research Qualifying Exam (RQE) is to test a student's readiness to conduct Ph.D.-level research, as demonstrated by their (a) engagement in a research project under the supervision of an ECE advisor, (b) effective communication and defense of their contribution to this project, presented in the context of the broader project objectives, and (c) ability to answer questions about related principles and technical background.

A. Expectations

At the qualifying exam, the student is to:

1. Provide a clear definition of the problem

- 2. Demonstrate a comprehensive understanding of the area (including related research)
- 3. Present preliminary results at the level of a conference or workshop paper.

The research work pertaining to the exam must have been performed at UMass while the student was enrolled in the ECE Ph.D.

B. RQE Committee and Exam Scheduling

The student will be examined by a committee consisting of four faculty members: the student's ECE advisor, two faculty members close to the research area (chosen by the advisor in consultation with the student), and one ECE faculty facilitator who works outside the student's research area, chosen by the Graduate Program Director (GPD) without input from the student and/or advisor; all graduate faculty who are not on leave will be assumed to be available for service as facilitators. The student or the student's advisor makes a request to the GPD to initiate the process. A minimum of two weeks' advance notice is required for the GPD to appoint the ECE faculty facilitator. Upon appointment, the GPD will provide the faculty facilitator this set of policies detailing the conduct of the exam since the faculty facilitator will be responsible for running the exam. Up to one committee member—not including the advisor or faculty facilitator—may be from outside the ECE department, but all four members must be faculty at UMass Amherst.

C. Documentation

At least one week prior to the oral presentation, the student will provide a four-page twocolumn document, in the standard format for conferences in their area, to all committee members. The quality of the RQE document is expected to be high - "submission ready" or nearly so - meaning that it should be clear, well organized, and carefully edited so it is relatively free of mechanical deficiencies (e.g. in spelling, grammar, usage).

If the work presented was performed in conjunction with other researchers (other students or/or the advisor), a footnote on the first page of the document should indicate the respective contributions of each member of the team. In addition to this written declaration of the student's role in the research presented, which is of course expected to be substantial and meaningful, questions about the nature and level of the student's involvement and their contribution may also be asked at the oral examination. The quality of the submitted RQE document is the student's responsibility, even when the student is not its sole author.

D. Oral Presentation

As per the above, the ECE faculty facilitator will run the oral examination. When all are present, the faculty facilitator will remind the student and the other committee members of the exam format and ground rules specified herein. The student will then give a 30-minute presentation describing their research work. After the presentation, the committee will ask questions:

(1) directly about the research work (as would be typical at a conference)

(2) in the general area of the research (to test the student's grasp of the problem area)

While other members of the committee are asking questions, the student's advisor is to remain silent. This "advisor prohibition" includes, but is not limited to: (1) helping the student answer a question; (2) rephrasing a question for the student; (3) providing any indication that the student is on the right or wrong track in answering a question. Once the other committee members have completed all of their questions, the advisor is then welcome (and expected) to ask questions. When the committee is finished asking questions, the four committee members will meet in closed session to discuss and vote on whether the student passed the oral exam. The student is considered to have passed the oral exam if at least 3 out of 4 committee members vote to pass. After the exam, the faculty facilitator will communicate the result to the ECE Academic Programs Office along with the date and time of the exam and a list of all those present.

E. Timeline

The student must attempt the Research Qualifying Exam within 24 months of entry, with a possible 6 month extension request from advisor. Failure to do so may jeopardize the student's candidacy. If the student fails the first attempt at the RQE, he/she must take the exam a second (and last) time within three (3) months of that failure. No more than two attempts will be allowed.

1. Any committee member may require that the exam be rescheduled if the student has not provided (the final copy of) the RQE document to the committee at least one week prior to the exam date.

2. Note that, with this revision, students may take the RQE before they complete the Core Requirement, provided that the advisor approves and communicates this approval to the ECE Graduate Program Director.

Department Seminars

M.S. and Ph.D. students are required to register for the one credit Seminar course during every semester that they are enrolled in courses (in the Fall the course is E&C-ENG 793A, and in the Spring the course is E&C-ENG 794). Students may register for any open section on SPIRE. The days/times listed on SPIRE are a formality only: the actual dates and times of the seminars will vary depending on the schedule of the invited speakers. When a seminar is announced, the department will publicize it via email. Students are required to attend a minimum of three (3) seminars each semester and to send a summary within seven (7) days to <u>umasseceseminar@gmail.com</u>. Note: the deadline for submitting seminar summaries is the last day of classes. Exceptions to this requirement include students on Continuous Enrollment, students taking courses remotely or on internship, and students enrolled only in thesis or dissertation credits (and not enrolled in any courses).

3MT and Poster Competitions

Graduate students are encouraged to participate in a variety of events each spring at the department, college and campus level. The Three-Minute Talks provide an opportunity for students to describe their research in a very concise format. Poster presentations allow more direct interaction. Most of the events have awards as well. These provide an early opportunity to present and discuss research projects before external publication. Discuss this with your advisor to get their approval that your work is sufficiently ready to show.

The ECE Graduate Research 3 Minute Thesis (3MT) and Poster Competition is held in early March each year. All ECE PhD students are encouraged to participate at least once before graduating. The event is also open to MS thesis students. Nominations are due mid December.

Internships/Co-ops

Graduate students interested in participating in a co-op or internship should inquire about those opportunities at the Career Development and Experiential Learning Center in the College of Engineering. Information about co-ops and internships can be found on their website: https://www.umass.edu/engineering/career-center/graduate-career-planning-and-resources. International students should see the section below regarding CPT and OPT experiences.

CPT and **OPT**

International students interested in participating in an internship during their academic program (CPT) or after graduation (OPT) should visit the website of the Office of Global Affairs: <u>https://www.umass.edu/international-programs/international-students-scholars</u>.

Academic Honesty and Ethics

The ECE department follows the UMass policy for Academic Honesty, which can be found at this website: <u>https://www.umass.edu/dean_students/academic_policy</u>.

Funding

Research Assistantships are under the control of individual faculty and are generally awarded in connection with thesis work. Teaching Assistantships are awarded by the department and prioritized to Ph.D. students. Other (non-ECE) sources of funding include assistantships or jobs in other departments or units within the university (require advisor and Graduate Program Director approval) Fellowships and scholarships can be found at the following website: <u>https://www.umass.edu/graduate/funding</u>.

Resources for Graduate Students

In the College of Engineering (COE), the <u>Career Development and Experiential Learning</u> <u>Center</u> (Career Center) offers a wide variety of assistance to Engineering students, including career and internship fairs, workshops, and one-on-one counseling to help with resumes and cover letters and much more. It is important to reach out to the Career Center early in a student's graduate career.

Students in the M.S. and Ph.D. programs may find resources across campus to be helpful during their time at UMass. The Graduate School has a comprehensive list with descriptions of <u>resources for graduate students</u>, including academic and student support resources.