
BUMÉCHE

**Boston University
Mechanical Engineering**

**Ph.D. Student Handbook
2021 - 2022 Academic Year**

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1 INTRODUCTION

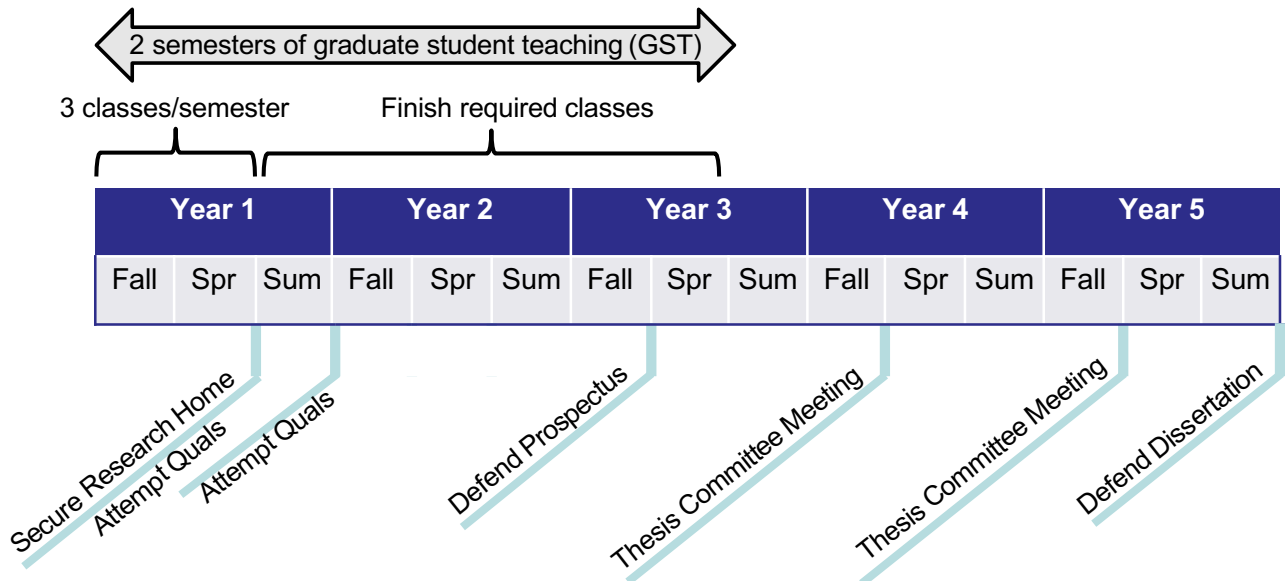
This document presents an expanded description of the requirements for earning a Ph.D. in Mechanical Engineering (MechE) at Boston University (BU.) It also outlines the administrative and operational details involved in completing these requirements. It is intended to serve as a reference guide for students and faculty in the Department.

2 OVERVIEW OF PHD PROGRAM TIMELINE

Typical progress through the MechE PhD degree follows the timeline described below:

- All students complete two semesters of Graduate Student Teaching (GST.) Most student complete their GST requirement and courses (ME 801 & ME 802) between the second and fifth semester from matriculation.
- Course requirements should be completed as early as possible, within the first two to three years.
- Students complete the required lab rotations in the first academic year before finalizing a lab home.
- The Oral Qualifying Exam is taken during the third semester in the first academic year.
- The Prospectus Defense should be presented by the end of the sixth semester from matriculation.
- PhD students have five years to complete the dissertation after becoming a PhD candidate. Meetings with their committee must occur at least annually following the Prospectus Defense and documented.
- The culmination of the PhD is the dissertation, which consists of both a written PhD Dissertation and an oral Dissertation Defense (Final Oral Exam.)

What to expect



Department of Mechanical Engineering

3 ADMINISTRATION OF THE Ph.D. PROGRAM

The Departmental Ph.D. Program Committee, and in particular the Chairperson of this committee, who is also the Associate Chair for Graduate Research Programs, is involved in most aspects of Ph.D. students' programs. This committee oversees admissions, submits recommendations on petitions, reviews the curriculum and program requirements, and monitors the progress of each student toward completion of degree requirements. The Department's Associate Chair for Graduate Research Programs is also a member of the College of Engineering Graduate Committee.

Students should contact the MechE PhD Academic Programs Manager and the Associate Chair for Graduate Research Programs (see Directory in Section 18) for assistance in matters relating to the Ph.D. Program.

4 ADMISSION

Students may be admitted to the Ph.D. program with either a Bachelor's or a Master's degree, or its equivalent, in engineering or a closely related field. Individuals who enter the post-Bachelor's Ph.D. degree program are required to declare the M.S. degree upon fulfillment of the M.S. degree requirements after they have passed their Prospectus Defense.

International and domestic students applying for September matriculation must submit a completed application by December 15th. Ph.D. applications for the spring semester will NOT be accepted. Decisions for financial aid are made in conjunction with the admission application.

All applicants are required to submit results from the General Graduate Record Examination (GRE). Applications submitted without the application fee are not considered.

Additional information of requirements and dates can be found in the College of Engineering Graduate Program Office (GPO) website <http://www.bu.edu/eng/prospective-graduate/apply/>

5 OVERVIEW OF DEGREE REQUIREMENTS

The general requirements for all Ph.D. students in the Department are successful completion of course requirements, a dissertation research project, two semesters of service as a graduate student teacher, and completion of online training modules on the responsible conduct of research.

The **course requirements** of the Ph.D. program are described on the Ph.D. Program Planning Sheet (see Forms in section 16). The student should select courses in consultation with his/her Academic Advisor. This consultation should involve a discussion of the match between the student's interests and the course content, as well as the time commitments the student anticipates making to coursework, research, and teaching over the course of the semester. The student's course selection must be approved by the student's Academic Advisor at the start of each semester. The Ph.D. program planning sheet (see Forms in section 16) should be used to guide the student's selection of courses. A completed planning sheet signed by the Academic Advisor needs to be turned in to the Academic Programs Manager upon

completion of structured course requirements. Structured courses are courses other than research credits and independent study credits. Additional information and requirements can be found in the College of Engineering Graduate Programs Bulletin, at <https://www.bu.edu/academics/eng/>

The **dissertation research project** is a major research endeavor. Each student is responsible for finding a Research Advisor and conducting scientific studies under the mentorship of the Research Advisor. The Research Advisor provides guidance to the student, but the student is expected to contribute ideas. Each student is responsible for completing four milestones related all, or in large part, to the dissertation research project: the Ph.D. Qualifying Examination (section 10), the Dissertation Prospectus Defense (section 12), the Final Oral Examination (section 13), and submission of the dissertation to the university library (section 13).

Each Ph.D. student is required to complete **two semesters of training as a graduate student teacher**. In the first semester of training as a graduate student teacher, the Ph.D. student must enroll in ME801. In the second semester of training as a graduate student teacher, the Ph.D. student must enroll in ME802.

Each Ph.D. student must complete **Responsible Conduct of Research (RCR) training** by the time he/she completes the Dissertation Prospectus Defense. The guidelines for how to fulfill the RCR requirement can be found here: <http://www.bu.edu/orc/training/responsible-conduct-of-research/>

Additional information and requirements can be found in the College of Engineering Graduate Programs policies website <https://www.bu.edu/academics/eng/policies/graduate-policies/>

6 ADVISORS

6.1 Academic Advisor

All Ph.D. students must have an Academic Advisor in the Department. New students will be assigned an Academic Advisor at registration. If one is not assigned by the time of registration or if the student wishes to change his/her Academic Advisor, the student should consult with the Department Academic Program Manager (see the Directory in Section 17). As soon as an Academic Advisor has been assigned or changed, it is up to the student to provide that individual's name to the Department's Academic Programs Manager.

6.2 Research Advisor

A Ph.D. student must also have a Research Advisor by the end of their second semester in the program. The Research Advisor does not need to have a faculty appointment in the Department. The Research Advisor may also be the Academic Advisor.

6.3 Finding a Research Advisor

Occasionally students enter the program with a specific research advisor in mind and may even plan to work on a specific project. The majority of students, however, will use their first one or two semesters in the program to define their specific interests in mechanical engineering and to identify the opportunities for a Research Advisor and Research Assistantship (Section 8.1). Ph.D. students can identify these opportunities by: 1) speaking with other

graduate students who are currently working in the various research groups within the Department; and 2) speaking with faculty members who lead these research groups. Some useful questions to ask these faculty are:

- What projects are currently going on and what projects are planned for the near future?

- What background is required to work in the lab?
- Is there the possibility of supporting a new graduate student on a Research Assistantship?
- What expectations does the faculty member have of graduate students?
- If the potential advisor has been at BU for at least a few years, does he/she have a strong history of training students in a timely manner? Have his/her students generally been successful?

Every Ph.D. student should begin steps 1 and 2 as soon as possible during the first semester, because finding a match between a funded research opportunity and the student's interests and skills can take some time. A prospective Research Advisor may expect the Ph.D. student to engage in a small research project as a means of testing out the match. Once a student finds a funded research opportunity and has the consent of a faculty member to be his/her Research Advisor and to supply the student with a Research Assistantship, the process of developing a research project begins.

7 ACADEMIC STANDARDS AND SATISFACTORY PROGRESS

7.1 Academic Standards

The academic progress of every graduate student is reviewed at the end of each semester. Failure to make satisfactory progress and remain in *Good Standing* can result in *Academic Probation*, *Suspension* for a stated time or until stated conditions are met, or *Dismissal*, as detailed below.

Grades of C+ or lower are not acceptable for the Ph.D. degree and are interpreted as course failures.

Every student is required to adhere to Boston University's Academic Conduct Code (<https://www.bu.edu/academics/policies/academic-conduct-code/>) in all aspects of their research, coursework, and teaching. This code stipulates the university's standards for academic honesty and integrity.

Good Academic Standing

Students maintain good academic standing when they: (1) earn a semester GPA of at least 3.00 (students enrolled only in Pass/Fail courses are exempt from the semester GPA standard); and (2) maintain a cumulative GPA of at least 3.00.

Academic Probation

A student is put on Academic Probation when s/he earns a semester or cumulative GPA below 3.00. Students on Academic Probation may have their financial aid discontinued. In the event that the semester or cumulative GPA is below a 2.00, a student may be dismissed from the program.

Students are reviewed after one semester on Academic Probation. Those who earn a semester and cumulative GPA of 3.00 or above will return to *Good Standing*. Those students who do not achieve *Good Standing* (as defined above) after the probationary semester will be subject to *Academic Suspension*, *Dismissal*, or an additional semester of *Academic Probation* as determined by the College on a case-by-case basis.

Academic Suspension

A student on Academic Probation faces Academic Suspension or Dismissal when s/he has not achieved *Good Standing* (as defined above) after the most recent semester of

Academic Probation. Specifics regarding *Dismissal* or the duration and terms of the *Academic Suspension* will be determined by the College on a case-by-case basis. Dismissal results in permanent separation from the University. Appeals of *Dismissal* or *Suspension* are directed to the Associate Dean for Academic Programs.

Reinstatement after Academic Suspension

Students who have fulfilled their period of **Academic Suspension** must meet with their academic advisor and must also reestablish their standing in the College by contacting the College of Engineering Graduate Programs Office.

GPA Requirement for Graduation

Doctoral students must complete all degree program requirements and earn a cumulative grade point average of at least 3.00 to be awarded a degree. The cumulative grade point average includes all coursework taken after matriculation and all courses completed prior to matriculation submitted in fulfillment of degree requirements.

7.2 Satisfactory Progress

The Department considers that a Ph.D. student is making Satisfactory Progress towards completing the Ph.D. program if the student meets the following conditions:

1. The student is in Good Academic Standing.
2. By the end of the student's second semester, he/she has secured commitment from a faculty member to serve as the student's Research Advisor. This commitment signifies that the faculty member will use a research grant to provide a Research Assistantship (see Section 8.1) to the student starting at the beginning of the first summer (May 1, 2018) or, in a case where the student has an external fellowship, that the faculty member will mentor the student on a dissertation project that is consistent with the terms of the fellowship. ***This commitment must be renewed in each subsequent semester for the student to make Satisfactory Progress.***
3. By the end of the student's third semester, he/she has attempted the Ph.D. Qualifying Exam. By the end of the student's fourth semester, he/she has passed the Ph.D. Qualifying Exam.
4. Within one year of attaining candidacy in the Ph.D. program (see Section 11), he/she has attempted the Dissertation Prospectus Defense (see Section 12). By the end of the student's seventh semester, he/she has passed the Dissertation Prospectus Defense.

The Associate Chair for Graduate Research Programs reviews the progress of each Ph.D. student annually. Any student not making Satisfactory Progress may be subject to withdrawal from the Ph.D. program.

8 TUITION

Graduate Tuition and Fees for full-time and part-time students are listed at <https://www.bu.edu/eng/prospective-graduate/apply/graduate-tuition-fees/>

Requirement of medical insurance

Students enrolled for 3/4 time or more and all international students must enroll in the University's medical insurance plan unless proof of other comparable health insurance is provided. If a student has other coverage and fails to submit a Waiver to Student Accounting Services by the deadline, that student is still obligated to pay the medical insurance charge. The University cannot accept medical insurance 3 waivers based on coverage by an insurance

company outside the United States. For additional information, see <http://www.bu.edu/studentaccountingservices/resources/medical-insurance/>

9 FUNDING

Every Ph.D. student must be funded through a Research Assistantship (RA), Departmental Distinguished Fellowship, Dean's Fellowship, or external fellowship for the duration of his or her Ph.D. studies. All incoming PhD students on a Research Assistantship or Departmental Distinguished Fellowship will receive the same monthly stipend at the base rate \$2,917.50 monthly (\$35,010 annually.) Upon fully passing the Oral Qualifier Exam, Ph.D. candidates will receive a stipend increase of 5% above the current base rate. PhD candidates will receive an additional 5% increase once these two conditions are both met: 1) they fully pass the Prospectus Defense and 2) complete the Responsible Conduct of Research (RCR) training.

9.1 Research Assistantships (RAs)

A Ph.D. student receives an RA to engage in research under the supervision of his/her Research Advisor. RAs are expected to engage in research full-time, with time allowed for courses during the academic year. Students funded on an RA may receive up to 16 credits/semester of tuition coverage for graduate courses applicable toward their degree.

9.2 Departmental Distinguished Fellowships and Dean's Fellowships

The Department and College have a limited number of Departmental Distinguished Fellowships and Dean's Fellowships to support first-year Ph.D. students. Students receiving one of these fellowships must remain in good academic standing. While receiving this fellowship, students are required to engage in research under the supervision of a faculty member and may receive up to 16 credits/semester of tuition coverage for graduate courses applicable toward their degree.

9.3 External Fellowships

The Department encourages Ph.D. students to seek external fellowships from reputable sources that will enhance their careers and provide resources toward their tuition and stipends. In the event that an external award is less than the stipend rate offered by an RA or Departmental Distinguished Fellowship, the College will supplement to make up the difference. The Department will also encourage our students to seek external fellowships by providing recipients of these fellowships with additional resources for academic enrichment (e.g. books, supplies, travel to conferences and workshops) while they are graduate students at BU.

10 ADMINISTRATIVE REQUIREMENTS

10.1 Registration

All students are required to register each academic semester (Fall, Spring, and Summer) unless on an approved Leave of Absence. A continuing student is required to register prior to the registration deadline or a late fee will be assessed. If a student needs to be registered for either of the summer terms, it is his/her responsibility to do so. Please see Boston University (BU)'s registration deadlines and information: <https://www.bu.edu/reg/calendars/semester/>

Ph.D. students registering for research credits should register for ME900 (Research) if they have not yet passed their Prospectus Defense and ME991 (Dissertation Research) if they

have passed their Prospectus Defense. Both ME900 and ME991 are Pass/Fail.

10.2 Full-Time Status

To have status as a full-time student at Boston University, a student must be either enrolled in at least 12 credits in the current semester OR certified as full-time by the Academic Programs Manager by the registration deadline. A student may attain full-time status when enrolled in fewer than 12 credits if the student is substantively engaged in research (*i.e.*, funded on an RA, Departmental Distinguished Fellowship, or External Fellowship) and/or teaching training. Full-time status is examined for every student every semester; hence, in any semester in which the student seeks full-time status, he/she must meet the 12-credit minimum or be certified as full-time by the Academic Programs Manager.

A typical course load for a 1st-year post-Bachelors Ph.D. student funded on a Distinguished Department Fellowship or Dean's Fellowship is three courses per semester. Most Ph.D. students will be engaged as Graduate Student Teachers for two semesters of their second year in the program; however, some Ph.D. students will be engaged as Graduate Student Teachers in their first year of the program. Although students need to have completed only three graduate courses by the start of their second year in order to be prepared for the Ph.D. Qualifying Exam in the fall of their second year, it is nevertheless advisable that students complete six courses in their first year. Taking three courses per semester in the first year provides students the preparation and time to succeed in the major requirements of 2nd-year PhD students (research, Qualifying Exam, teaching training) and avoids delaying the completion of all of their structured course requirements.

A typical credit load for a student funded on an RA is eight credits per semester until the student completes all credit requirements for the Ph.D. degree (see sections 9.3 and 9.4). Some students may, in consultation with their Research Advisor, choose to enroll in more than eight credits because they want to take more than two courses in a given semester. Normally, no more than four (4-credit) courses should be taken concurrently.

Following completion of all credit requirements for the Ph.D. degree, the student enrolls in two research credits or dissertation credits per semester until he/she successfully completes the Final Oral Examination and submits his/her dissertation to the library.

The only exception to the credit requirements stated above is an authorized Leave of Absence. *All International students must be classified full-time to maintain their visa status.*

10.3 Credit Requirement for Post-Bachelor's Ph.D. Students

Post-Bachelor's Ph.D. students are required to complete a minimum of 64 credits applicable to their degree. Of this total, 32 credits must be structured courses at the 500-level or higher. A minimum of 16 research/dissertation credits is required.

Post-Bachelor's Ph.D. students admitted to the program are required to declare the M.S. degree upon fulfillment of the degree requirements.

10.4 Credit Requirement for Post-Master's Ph.D. Students

There are no structured course requirements for post-Master's Ph.D. students; however, students are required to complete 32 credits applicable to their degree. Of those, a minimum of eight credits of research/dissertation are required. Post-Master's Ph.D. students, who have completed all credit requirements, are required to register for a minimum of two research or dissertation credits each academic semester unless taking a specific course or on an approved

Leave of Absence. Courses below the 500 level are not applicable to the post-Master's Ph.D. program. Post-Master's Ph.D. students are not permitted to declare an M.S. degree.

No courses may be transferred from other universities to reduce the 32-credit requirement. Specific requirements relative to the selection of courses, seminars, and research or directed study will be determined in consultation with the student's Academic Advisor and/or Research Advisor.

Post-Master's Ph.D. students who obtained their Engineering Master's degree at Boston University may petition to apply credits not used for their Master's degree to their Ph.D. program. Only credits that are applicable to degree requirements are acceptable (i.e., 500-level and above, a B or better, etc.). The student is required to fill out a petition form and have it signed by his/her advisor and Department's Associate Chair for Graduate Research Programs before submitting it to the Graduate Programs Office for processing.

10.5 Residency Requirement

Each student must satisfy the minimum residency requirement of two consecutive regular semesters of full-time graduate study at Boston University. Full-time study in this context is a full-time commitment to the completion of degree requirements as determined by the Associate Dean for Research and Graduate Programs. In order to graduate, students must be registered as full- or part-time students in the semester in which they complete degree requirements and in the preceding semester.

10.6 Leave of Absence or Withdrawal

Normally, students must register for each academic semester (excluding summer term) until the completion of all degree requirements. If a student requires a leave of absence, it is the student's responsibility to submit a completed "[Withdrawal/Leave of Absence](#)" Form (see the list of Forms in section 16) to the Graduate Programs Office. Students are allowed a maximum of two semesters of leave without having to re-apply to the program. Beyond two semesters, the student must submit a petition approved by the Research Advisor and the Department's Associate Chair for Graduate Research Programs to the Graduate Programs Office. *The Leave of Absence/Withdrawal form must be submitted before the first week of classes, or the student is responsible for a certain percentage of the cost of his/her tuition, based on the exact day the form was submitted to the Graduate Programs Office.* Mere absence from classes does not reduce a student's financial obligation or guarantee that a final grade will not be recorded.

A student who withdraws from the University before classes start is eligible to receive full credit of tuition and fees excluding non-refundable deposits and the application fee. No fees are returned after classes start. A request for a Withdrawal or Leave of Absence is effective on the day it is received in the appropriate office; charges are canceled based on the effective date in accordance with the University's published refund schedule available at www.bu.edu/reg. A credit balance (overpayment) resulting from withdrawal, cash payment, and/or other adjustment will be refunded by request in writing, or in person, at the Student Accounting Services, 881 Commonwealth Avenue, Boston, MA 02215.

The period of authorized Leave of Absence is counted as part of the time allowed for completion of degree requirements.

International students must also contact the International Students and Scholars Office when taking a leave of absence or when withdrawing from the University.

All students receiving financial aid or student loans should contact the Manager of Financial Aid, Graduate Programs Office, 48 Cummington Mall, Second Floor, regarding their

continued eligibility for those funds. Federal funds will be disbursed on a pro-rated basis, depending upon the actual date of leave or withdrawal.

10.7 Auditing Courses

An auditor is a student who attends a class to acquire knowledge, but not to earn credits or a grade. Audited classes do not count towards degree requirements. An auditor may not change his or her status after the fifth week of classes. Auditors must attend classes regularly, do assigned reading, and participate in discussions, but they are excused from examinations. Auditors are admitted to a course on a space-available basis subject to the rules of the School or College offering the course.

Ph.D. students who have completed all credit requirements as outlined in Sections 9.3 and 9.4 are entitled to officially audit one course each semester, excluding summer term, at no charge. Engineering graduate courses at the 900 level, language courses, physical education courses, studio courses, or courses with laboratories may not be audited. Students eligible to audit a course should confirm their eligibility with the department. Ph.D. students who have not completed all credit requirements as outlined in Sections 9.3 and 9.4 are subject to the full tuition and fees of the course, and their scholarships will not cover tuition for audited courses.

10.8 Laboratory Injuries – Coverage for PhD Students

It is important to seek treatment promptly for any laboratory injury or exposure. If the injury or exposure does not require immediate transport for emergency care, PhD students should contact the University's Research Occupational Health Program at 617-414-ROHP (7647), or report to 72 E. Concord St., Evans 825, which is staffed by specially trained nurse practitioners. ROHP provides medical attention and coordinates aftercare at ROHP for laboratory injuries and exposures without any cost to PhD students.

If you have questions about costs related to laboratory injuries and exposures, please contact ROHP by phone (617-358-7647) or email (rohph@bu.edu) ROHP. Complete information and procedures for reporting can be found here <http://www.bu.edu/researchsupport/safety/rohph/>.

11 Ph.D. QUALIFYING EXAMINATION

11.1 Ph.D. Qualifying Examination

ME PhD new qualifying exam policy is effective for students entering the PhD program in fall 2020 and later. Students entered the PhD program in fall 2019 will have the option to take the new qualifying exam in fall 2020. The purpose of the PhD qualifying exam is to ensure that students have the capability of synthesizing information from courses and literature to form a deep understanding of the research field. The exam will evaluate students' technical communication skills in both written and oral format. Students are required to review a research paper in a specific research area, submit a written report, and give an oral presentation.

Please refer to the Overview of the ME PhD Qualifying Exam for specific guidelines: (https://www.bu.edu/eng/files/2020/10/ME_PhD_NewQualifyingExam_Documents1.pdf)

New qualifying exam form for students who enter the PhD program in fall 2020 and after: (<https://www.bu.edu/eng/files/2020/11/ME-PhD-Qualifying-Exam-Form-New.pdf>)

All Ph.D. students will take the qualifying examination during the spring and summer semester of the first year. Students must schedule the exam in advance by completing the Qualifying Examination Schedule Form available from the Department Academic Programs Manager.

12 Ph.D. CANDIDACY

A student is admitted to Ph.D. candidacy upon successful completion of the mathematics requirement and the Qualifying Examination. At that time the candidate will receive formal notification of Ph.D. candidacy from the Department. Students should take the initiative by checking with the department if they do not receive a candidacy letter within a reasonable time after fulfilling both requirements.

The maximum period allowed between matriculation and acceptance to Ph.D. candidacy is four semesters. The period of an authorized Leave of Absence is counted as part of the time allowed for completion of degree requirements.

Once entered, Ph.D. candidacy will expire on its fifth anniversary. The student may need to petition the department for an extension of time (see Section 16). The petition should include a plan or timeline for completion; an explanation of why the dissertation has not been completed on time; and, confirmation from the advisor that he/she agrees to the plan.

13 DISSERTATION PROSPECTUS DEFENSE

13.1 Overview

Within one year of attaining candidacy, it is required that a Ph.D. candidate will present an oral defense of his/her Dissertation Prospectus to the prospectus committee. The purpose of the prospectus defense is to determine whether the topic to be investigated is an acceptable research problem for the degree and whether the student is prepared to conduct the proposed research. The student is expected to have engaged in a substantive research effort under the mentorship of his/her Research Advisor before scheduling the Prospectus Defense so that the student can present a cogent description of the dissertation project. However, the prospectus defense should be completed before the more extensive phase of the actual research is undertaken. A complete package of information and necessary forms can be obtained from the Department Academic Programs Manager. In no instance will a student be allowed to present a Prospectus Defense until he/she has attained candidacy. Ph.D. students should check with the Department Academic Programs Manager for any addition rules or restrictions.

13.2 Prospectus Defense Committee

The Prospectus Defense Committee will normally consist of a minimum of three College of Engineering tenured or tenure-track faculty and must include at least two faculty members of the Department. Membership of the committee generally constitutes the nucleus of the Final Oral Examination Committee.

The composition of the Prospectus Defense Committee is to be reported to the Department's Associate Chair for Graduate Research Programs by the Research Advisor prior to scheduling the Prospectus Defense. The Chair of the Committee is the student's Research Advisor. A major doctoral Research Advisor who is not a member of the Department may serve under the following two conditions:

1. He/she is approved by the Department Graduate Committee.

2. A faculty member of the Department accepts to serve as co-major Research Advisor.

Occasionally scholars from outside the University serve on dissertation committees. When a scholar is from outside the University, a "Special Service Appointment" form (see Forms in Section 16) must be completed. A copy of the person's vitae and the completed form, with the approval of the Department's Associate Chair for Graduate Research Programs is submitted to the Associate Dean for Research and Graduate Programs. The student will be notified in writing of the approval or disapproval of the person requesting special appointment.

13.3 Dissertation Prospectus

The student must provide a copy of the Dissertation Prospectus to all members of the Prospectus Defense Committee before scheduling the Prospectus Defense. The prospectus should include:

1. A title page
2. A project summary of no more than 350 words
3. A statement of the problem to be investigated
4. Background information from prior work in the field
5. Research design and methods
6. Preliminary results (if available)
7. Anticipated timetable for completion
8. Bibliography
9. Curriculum vitae

More details on these sections are provided on the accompanying pages of the "Ph.D. Dissertation Prospectus Defense" form

The preferred format is similar to that of proposals submitted to a Federal Agency. There is a 25-page (single-space) limit on the scientific portion of the proposal. This includes tables and figures but does not include the bibliography. Please refer to the "Research Guide For the Writers of Theses and Dissertations" (see list of Forms in section 16).

After reading the Dissertation Prospectus and agreeing that the student is ready, the Prospectus Committee members will indicate their approval on the "Ph.D. Dissertation Prospectus Defense" form (see list of Forms in section 16). It is the student's responsibility to obtain the necessary committee members' signatures and an agreed upon date and time for the presentation. The student is responsible for reserving a room for the presentation. When all this has been completed and noted on the "Dissertation Prospectus Defense" form, the form (with abstract attached) is submitted to the Department's Associate Chair for Graduate Research Programs for approval. The Department's Associate Chair for Graduate Research Programs must indicate approval on the form, send a copy of the form and the abstract to the Department's Academic Programs Manager and then forward the original form to the Chair of the Prospectus Committee. It is the Chair's responsibility to bring the original form containing the Committee Members' signatures to the oral presentation.

13.4 Oral Presentation of the Prospectus

A public oral presentation of the Prospectus must be made in which the student describes the research and demonstrates his/her preparation to date toward the doctoral dissertation. The schedule of the oral presentation is distributed by the Department once the student is advised by the Committee that the proposal is accepted for the oral defense.

The oral defense will be scheduled no earlier than two weeks after the written Prospectus is accepted by the committee. The title, abstract, date, time and location of the Oral Proposal Defense must be submitted to the Department's Academic Programs Manager, ***two weeks*** before the Prospectus Defense. Failure to meet this deadline can result in postponement of the defense. Necessary form(s) and description of defense procedures are available in the Department's Academic Programs Manager.

It is the Department's responsibility to provide adequate publicity for the student's Prospectus Defense. Defenses are open to the public.

The faculty Research Advisor should chair the Defense and begin with an introduction of the Ph.D. student. The introduction should include a brief description of the student's academic background. The student should restrict the length of the presentation to approximately one hour. During this period, questions may be asked by Committee Members and the audience. The Chair should guard against digressions and inappropriate questioning during the presentation. Following a reasonable question period, the student and the audience are dismissed and the Committee remains to complete its assessment of the Prospectus Defense.

13.5 Assessment of the Prospectus Defense

The Dissertation Prospectus Committee is charged with assessing the appropriateness of the problem and the student's preparation based on the written dissertation proposal and the oral presentation. The Committee must decide if the student passes, passes with conditions, or fails. The Committee may determine that the student needs additional courses and/or suggest revisions to the dissertation topic goals and approaches to the solution. If there are required revisions to the written proposal, or if additional course work is required, such conditions must be appropriately documented and attached to the Ph.D. Prospectus Defense Form.

13.6 Reporting of the Prospectus Defense

The Chair of the Committee will complete the "Prospectus Defense Results" section on the "Ph.D. Dissertation Prospectus Defense" form (see list of Forms in section 16). If the student is required to meet certain conditions, those conditions should be listed on a separate sheet and attached to the form. Those conditions should also contain time frames for completion. The Chair then signs the form and forwards it to the Department's Associate Chair for Graduate Research Programs for signature.

After the Department's Associate Chair for Graduate Research Programs or Division Associate Head records the results of the defense, the signed original "Ph.D. Dissertation Prospectus Defense" form is forwarded to the Department's Academic Programs Manager. The department will confirm the results of the Prospectus Defense to the candidate in writing. If the results indicate that more work must be done and/or that specific conditions must be met, these conditions will be indicated in the letter to the student.

13.7 Registration after Passing Prospectus Defense

Post-prospectus Ph.D. candidates will enroll for research credits of dissertation (ME991). Once all credit requirements have been satisfied, post-prospectus Ph.D. candidates must enroll for a minimum of two dissertation credits (ME991) per semester until completion of the degree. Registration each semester allows the student to use all academic facilities of the University and entitles Ph.D. candidates to audit one course per semester, excluding summer term, at no charge provided they have met the credit requirements (sections 9.3 and 9.4).

Failure to register for two consecutive academic semesters without having been granted authorized Leave of Absence will result in termination of degree status

13.8 Committee Meetings after Passing Prospectus Defense

Following completion of the Prospectus Defense, **each Ph.D. student is required to meet with his/her Dissertation Prospectus Committee annually until the dissertation is complete.** Over the time between the Prospectus Defense and the Final Oral Examination (section 13.1). At each of these annual meetings, the Ph.D. student is expected to present an update on the research that he/she has performed towards the dissertation since the last committee meeting. The Committee is expected to engage the student in discussions about the research in ways that will guide the student's progress and preparation for the dissertation.

14 FINAL ORAL EXAMINATION AND DISSERTATION

Students shall present themselves for a Final Oral Examination in which they must defend their dissertation as a worthy contribution to knowledge in their field and demonstrate mastery of their field of specialization as related to the dissertation.

Students are expected to read and follow the latest edition of the "Research [Guide for the Writers of Theses and Dissertations](#)" (see the list of Forms in section 16). Although students will have an opportunity to make final revisions to the dissertation and abstract after their Final Oral Examination, they should not regard their Final Oral Examination version as a "rough draft." Specifically, this version of the abstract is the version circulated to the College of Engineering, members of the examining committee and the Office of the Provost and Executive Vice President. A final version of the abstract is submitted with the definitive version of the dissertation for publication in *Dissertation Abstracts International*.

Dissertations are public documents. The student's final work is a significant contribution to their field of study. In some cases, an embargo may be necessary due to sensitive material in the document. It is possible to request an embargo on a thesis or dissertation restricting its availability. Students should follow the directions on how to request an embargo in the above-mentioned guide.

No student will be allowed to defend a completed Ph.D. dissertation if he/she is not a Ph.D. candidate. These are the minimum requirements of the College of Engineering. Ph.D. students should check with the Department's Academic Programs Manager for any additional rules or restrictions.

14.1 Final Oral Examination Committee

The nucleus of the Final Oral Examination Committee is normally comprised of the Prospectus Defense Committee. It is the candidate's responsibility, in conjunction with his/her Research Advisor, to appoint a Defense Committee. **The minimum Final Oral Committee size is five: the major Research Advisor (1st reader), three additional readers, and an examination Chair.** A minimum of two of the five members on the committee must be (tenured or tenure-track) faculty from the Department. The Department assigns the Chair for the committee. A reader cannot also act as the Chair for the committee. The Chair does not have to be a member of the Department, but must be a member of the College of Engineering. A major Research Advisor who is not a member of the Department may serve under the following two conditions:

1. He/she is approved by the department's Graduate Committee.
2. A faculty member of the Department accepts to serve as co-major Research Advisor.

When any of the committee members is from outside the University a "Special Service Appointment" form (see the list of Forms in section 16) must be completed. The completed form and a copy of the person's vitae, with the approval of the Department's Associate Chair for Graduate Research Programs is submitted to the Senior Associate Dean for Academic Programs. The student will be notified in writing of the approval or disapproval of the person requesting special appointment. If this process was followed during the Prospectus Defense, the information should already be in the student's file and will not need to be repeated. However, if this is a new member or for some reason the process was not followed at the time of the Prospectus Defense, it will need to be done prior to scheduling a date for the final defense. This is a College rule that will serve as a minimum requirement.

14.2 Ph.D. Dissertation Defense Abstract

The candidate submits the abstract, maximum of 350 words to his/her major professor for approval. Once the abstract has been approved by the major Research Advisor, and a tentative defense date determined, the student is responsible for emailing the final copy to the Department Academic Program Manager. ***This form must be emailed to the Academic Programs Manager at least three weeks prior to the proposed date of the dissertation defense*** for announcement and committee chair recruitment purposes.

14.3 Final Oral Examination

The Final Oral Examination is a public presentation of the candidate's dissertation. The presentation should clearly define the problem, describe the method(s) used to solve the problem, report results and establish significance of the results. The candidate should contact the Department Academic Program Manager for ***current*** forms, guidelines and deadlines.

The purpose of the Final Oral Examination is to ensure that the dissertation constitutes a worthy contribution to knowledge in the candidate's field and that the candidate has attained mastery in his/her field of research specialization.

14.4 Arranging for a Final Oral Examination

The candidate must provide a copy of the Dissertation to all members of the Final Oral Examination Committee prior to requesting that his/her examination be scheduled. The student can obtain a copy of "Research Guide for the Writers of Theses and Dissertations" (see the list of Forms in section 16), from the Department's Academic Programs Manager. It is the candidate's responsibility to ensure that all formatting and reproduction requirements are met, including his/her Abstract and Dissertation.

The student is responsible for obtaining a preferred date and time for the presentation by having the agreement of all his/her Committee members.

It is the candidate's responsibility to obtain signatures of all Committee members on the "Ph.D. Final Oral Examination" form indicating they have read the dissertation and agrees the individual is prepared to proceed. The candidate then submits the form to the Department's

Academic Programs Manager. ***This must be done, at a minimum, two weeks prior to the defense.*** Candidates must adhere to the current deadlines for completing the Final Oral Examination and submitting their Dissertation (see the list of deadlines in Section 16).

It is the student's responsibility for scheduling a date, location and time with all the Dissertation Defense Committee members for the examination. Conference room reservations can be requested via the ME website.

The name of the Chair is provided to the candidate by the department. The student is also responsible for providing the Chair with a copy of the dissertation.

It is the department's responsibility to provide adequate publicity for the student's Final Oral Defense a minimum of two weeks prior to the Dissertation Defense.

The Department's Academic Programs Manager sends the signed original "Ph.D. Final Oral Examination" form to the Chair. The Chair brings the original form to the presentation.

14.5 Conduct of the Final Oral Examination

No Final Oral Examination may begin unless all College approved committee members, as listed on the "Final Oral Examination" form are present. It is the Chair's responsibility to enforce this requirement. The faculty Research Advisor or Committee Chair should introduce the candidate and include a brief academic background description.

The candidate should restrict the length of the presentation to approximately one hour. The candidate's conduct should be of a professional manner, and any handouts, slides etc., should be neatly prepared. During this period, questions of clarification may be asked by the Committee members or the audience.

The Chair should guard against digression and inappropriate questioning during the presentation. It is the Chair's responsibility to ensure the student's presentation is given the respect it deserves by not allowing Committee or audience members to have side discussions.

Following a reasonable question and answer period, the audience should be dismissed by the Chair. The Committee may wish to ask additional questions of the candidate at this time. Following this additional questioning by the Committee, the candidate should be excused so the Committee may complete its assessment of the Defense and Dissertation.

14.6 Assessment of the Final Oral Examination

The Final Oral Examination Committee is charged with assessing the completeness of the research, contribution to knowledge, and the candidate's mastery of his/her research area, based on the written dissertation and the oral presentation. Vote may be ballot or voice. A unanimous vote is required for a candidate to pass. It is the Chair's responsibility to call the candidate back after the Committee has reached a decision. The Chair will advise the student of the Committee's decision. At this time the candidate should be advised of any changes that must be made to the final title, abstract or dissertation document.

14.7 Reporting the Results of the Final Oral Examination

The College's "Ph.D. Final Oral Examination Form" must be completed at the examination, with specific indication of whether the title, abstract and dissertation are acceptable as submitted. It is the Chair's responsibility to see that this form is completed and signed. Any required revisions are to be noted on the form and a separate piece of paper indicating what is to be done is then attached to the form. Time frames should be included in the listing. Committee members should sign off on the "Ph.D. Final Oral Examination" form at this time, ***but will refrain from signing the Approval page until all conditions have been met.***

Any revisions must be completed as soon as possible and in accordance with the committee's requirements. If all requirements are acceptable, the Approval page (see the list of Forms in section 16) of the dissertation is to be signed by **all** Committee members, except the Chair.

The Chair delivers the signed "Ph.D. Final Oral Examination" form and any attachments to the Department's Associate Chair for Graduate Research Programs. The Department's Associate Chair for Graduate Research Programs records the results and sends the signed document to the Department's Academic Programs Manager. It is the responsibility of the Department's Academic Programs Manager to ensure that all necessary information is recorded with the University.

14.8 Dissertation Approval

Final approval of the title, abstract and dissertation, if not given at the time of the examination, will be indicated by the signatures of **all** Committee members, except the Chairperson, on the Dissertation Approval page.

It is the student's responsibility to deliver copies of the Dissertation to the major Research Advisor and to his/her department to satisfy final department requirements. At this point the student will complete the "[Boston University Mugar Memorial Library Thesis and Dissertation Approval](#)" Form (see the list of Forms in Section 16), and the Department's Associate Chair for Graduate Research Programs will sign approval.

It is the student's responsibility to visit the Library to have the Approval page verified BEFORE submitting it to the committee members for signatures. The Department's Academic Programs Manager will retain one copy of the Approval page and Title page for recording purposes.

Doctoral candidates are expected to submit the significant results of their research to recognized journals for publication.

14.9 Library Submission

It is the Department's Academic Programs Manager's responsibility to ensure that the Approval page for the dissertation has been signed by **all** the Committee Members (except the Chair). The student's record and account balances should be checked at this time.

After submitting the Approval page and title page to the Academic Programs Manager, the student must submit their thesis electronically to Mugar Library. The information on how to do this is listed on <http://www.bu.edu/library/guide/theses/>. Please make sure to have your approval page (signature page) approved by the library before you have your committee members sign it as you must use their template.

It is the responsibility of the Graduate Programs Office to ensure that the University records reflect that the candidate has completed all necessary requirements for his/her Ph.D. degree and that the student's name appears on the official graduation list.

15 GRADUATION

The student must inform the Graduate Programs Office (GPO) of their intent to graduate. The Department in conjunction with the Graduate Programs Office will advise the student of the graduation proceedings. It is the student's responsibility to inform the Graduate Programs Office of his/her current mailing address and email address. See the GPO's website on how to apply to graduate: <https://www.bu.edu/eng/current-students/grad/current-students-2/graduation/>

16 DEADLINES FOR Ph.D. STUDENTS

The College of Engineering has a uniform set of deadlines for all of its Ph.D. programs: <https://www.bu.edu/eng/current-students/grad/current-students-2/graduate-program-deadlines/>

17 Ph.D. PROGRAM FORMS AND REQUIRED SIGNATURES

The following forms may be required from Ph.D. students throughout the duration of their program. Unless indicated otherwise below, all forms are available on the [MechE Department website](#) and through the Department's Academic Programs Manager.

1. [Withdrawal and Leave of Absence](#) – To be submitted to the Graduate Programs Office for approval and processing.
2. [Ph.D. Program Planning Sheet](#) – To be completed by each Post-Bachelor student as he/she progresses through the program's course requirements. Upon completion of these requirements, the form must be signed by the student's Research Advisor and submitted to the Department's Academic Program Manager.
3. [Qualifying Exam Form](#) – Parts 1-4 is to be completed in advance of the qualifying exam and returned to the Department's Academic Program Manager and then approved by the chair of the Department Qualifying Exam Committee a month before the exam.
4. [Request for a Special Service Appointment in Engineering](#) – To be signed by the Department Graduate Associate Char, it should be filled out then turned into the Department's Academic Program Manager and then she/he submits to the Graduate Programs Office for approval by the Associate Dean for Research and Graduate Programs. Attach a copy of the individual's curriculum vitae.
5. [College Ph.D. Dissertation Prospectus Defense](#) – To be signed by all the Readers, Chair, and the Department's Associate Chair for Graduate Research Programs and then submitted to the Department's Academic Programs Manager.
6. [Post Prospectus Committee Meeting Form](#)- To be filled out by the student for the **annual** committee meeting. Signed by the Student and then submitted to the Department's Academic Programs Manager.
7. [Ph.D. Final Oral Examination](#) – To be signed by all committee members and the Department's Associate Chair for Graduate Research Programs and then submitted to the Department's Academic Programs Manager one month before the exam date for the appointment of a Chairperson.
8. [Research Guide for Writers of Thesis and Dissertations](#) – Instructions for preparing the dissertation for submission to Mugar Library. Questions? Please contact: Brendan McDermott Thesis/Dissertation Coordinator, at the Mugar Memorial Library, Room 306 Email: brendan@bu.edu/ Phone: (617) 353-9387 <https://www.bu.edu/library/profile/mcdermott-brendan/>
9. **Approval Page for the Final Dissertation** – To be signed by **all** committee members, except the Chairperson, and anyone else required by the department. To be approved by Brendan BEFORE committee members have signed it. Questions? Please contact: Brendan McDermott Thesis/Dissertation Coordinator, at the Mugar

Memorial Library, Room 306 Email: brendan@bu.edu/ Phone: (617) 353-9387
<https://www.bu.edu/library/profile/mcdermott-brendan/>

10. **Graduation Application** – To be filled out by the student submitted online to the Graduate Programs Office (GPO.) Please make sure to forward your email confirmation of graduate to the Department’s Academic Programs Manager at bumeche@bu.edu

11. **Survey of Earned Doctorates** – This questionnaire should be completed at the time of library submission, signed by the student and returned to the Graduate Programs Office (GPO)

12. **General Petition** – To be signed by the advisor and the Department’s Associate Chair for Graduate Research Programs, and then submitted to the Graduate Programs Office for approval by the Associate Dean for Research and Graduate Programs. Copy the Department’s Academic Programs Manager at bumeche@bu.edu

18 DIRECTORY

Department of Mechanical Engineering

MechE PhD Academic Programs Manager

- [Patty Robinson-Angel](#)
110 Cummington Mall, ENG 106
617-353-2812
bumeche@bu.edu

MechE Director

- [Selam Woldeselassie](#)
110 Cummington Mall, ENG 105
617-358-1138
selamw@bu.edu

MechE Associate Chair for Graduate Research Programs

- [Harold Park](#)
730 Commonwealth, EMA 212
617-353-4208
parkhs@bu.edu

MechE Chair

- [Alice White](#)
110 Cummington Mall, ENG 107
617-353-4846
aew1@bu.edu

Additional MechE department contact information can be found at
<https://www.bu.edu/eng/departments/me/people/>

College of Engineering (COE)

Director of Graduate Programs Office (GPO)

- [Stacey Herman](#)
44 Cummington Mall, Room 114
617-353-9760
enggrad@bu.edu

Senior Associate Dean for Academic Programs

- [Sol Eisenberg](#)
Engineering Research Building (ERB)
44 Cummington Mall, Room 601
617-353-4749
sre@bu.edu

Dean of the College of Engineering

- [Kenneth R. Lutchen](#)
Engineering Research Building (ERB)
44 Cummington Mall, Room 601
617-353-2800
klutch@bu.edu

19 RESOURCES FOR PHD STUDENTS

Equal Opportunity and Nondiscrimination

- [Complaint Procedures in Cases of Alleged Unlawful Discrimination or Harassment](#)
- [Disability Accommodation](#)
- [Equal Opportunity/Affirmative Action Policy](#)
- [Sexual Misconduct/Title IX Policy](#)
- [Student Grievance Procedure in Cases of Alleged Disability Discrimination](#)

If you have questions about the policies above, please contact: Stacey Herman, COE Director of Graduate Programs Office smherman@bu.edu / 617-353-9763

Childbirth and Adoption Accommodation for Full-Time PhD Students

<http://www.bu.edu/academics/policies/childbirth-and-adoption-accommodation/>

Vacation Policy for PhD Students

<http://www.bu.edu/academics/policies/vacation-policy-for-phd-students/>