Handbook for Ph.D. Students

Boston University
Department of Mechanical Engineering

2015-16 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 at Boston University. 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 ADMINISTRATION OF THE Ph.D. PROGRAM

The Departmental Graduate 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, and monitors the progress of each student toward completion of degree requirements. This committee also works closely with the Department Qualifying Exam Committee. The Department’s Associate Chair for Graduate Research Programs is also a member of the College of Engineering Graduate Committee.

Students may contact the Department’s Associate Chair for Graduate Research Programs (see Directory in Section 17) for assistance in matters relating to the Ph.D. Program.

3 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. Part-time study may be considered in some circumstances.

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 and requirements can be found in the College of Engineering Graduate Programs Bulletin, at www.bu.edu/bulletins/eng, or at www.bu.edu/eng/grad/apply.

4 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. A copy of the should be submitted to the Department’s Academic Programs Coordinator no later than the third week of the semester. Failure to obtain approval of such a plan of study within this time frame will preclude registration in the subsequent semester.
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 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 service as a graduate student teacher. In the first semester of service as a graduate student teacher, the Ph.D. student must enroll in ME801. In the second semester of service 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/

The general timeline for progression through the Ph.D. program can be found here: http://www.bu.edu/me/academics/graduate-2/road-map-to-ph-d-in-mechanical-engineering/

5 ADVISORS

5.1 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 Coordinator (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 Coordinator.

5.2 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.

5.3 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 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 at 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.

6 ACADEMIC STANDARDS AND Satisfactory progress

6.1 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.

   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.

6.2 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, 2016) 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.

7 TUITION
2015 – 2016 Tuition and Fees
Tuition for part-time students is $1,448 per credit plus a program fee of $20 per semester and a part-time student services fee of $60 per semester. Students registering for twelve credits or more each academic semester are obliged to pay the full-time tuition of $47,422 per academic year plus fees.

Health Services and Wellness Fee
Full-Time Graduate Students – Charles River Campus: $174 per semester

Graduate Student Services Fee
Full-Time Graduate Students – Charles River Campus: $156 per semester

Medical Insurance-Student Basic: $1,945 per academic year

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/

8 FUNDING

Every Ph.D. student must be funded through a Research Assistantship (RA), Departmental Distinguished 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 ($10,500). 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 1) they fully pass the Prospectus Defense and 2) complete the Responsible Conduct of Research (RCR) training.

8.1 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.

8.2 Departmental Distinguished Fellowships

The Department has a limited number of Departmental Distinguished Fellowships to support first-year Ph.D. students. Students receiving this fellowship 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.

8.3 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.

9 ADMINISTRATIVE REQUIREMENTS

9.1 Registration

All students are required to register each academic semester (Fall and Spring) 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.
9.2 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 completing the "Certificate of Full-Time Participation in Graduate Program" form (see the list of Forms in Section 16) and then obtaining all required signatures on this form at the time of registration. As indicated on this form, 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) and/or teaching service. 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 complete the Certification form.

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.

9.3 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.

9.4 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.

9.5 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.

9.6 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.

9.7 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 Ph.D. QUALIFYING EXAMINATION & MATHEMATICS REQUIREMENT

10.1 Ph.D. Qualifying Examination

The Mechanical Engineering Ph.D. Qualifying Examination is an oral examination. Please refer to the PhD Qualifying Exam Form (http://www.bu.edu/me/files/2010/06/ME-Quals.pdf) for specific guidelines.

All Ph.D. students will take the qualifying examination during their third semester and must pass by then end of their fourth semester, and therefore have two opportunities to pass the exam. If a second attempt is required, the student shall repeat the entire exam. After failure a second time, the student is asked to leave the program on grounds of inadequate progress.

Students must schedule the exam in advance by completing the Qualifying Examination Schedule Form available from the Department Academic Programs Manager.

10.2 Mathematics Requirement

Post-Bachelor’s Ph.D. students - Complete, with a grade of B+ or better, one of the listed courses available from the Department’s Academic Programs Manager.

Post-Master’s Ph.D. students - Complete the post-Bachelor’s requirement; or, Submit evidence of successful completion, a grade of B+ or better, of an equivalent course as determined by the department’s Graduate Committee.

The mathematics requirement is one of the course requirements, as described on the Ph.D. Program Planning Sheet (see Forms in section 16). All Ph.D. students are required to fulfill the mathematics requirement no later than the end of their fifth academic semester. The Department Graduate Committee will review the list of courses periodically.

10.3 Exceptions for Transfer Ph.D. Students

Transfer students must provide ample evidence they have satisfactorily passed comparable examinations to the Department Ph.D. Qualifying Examination and satisfied the mathematics requirement.

A student interested in waiving a qualifying examination requirement or a mathematics requirement should submit a petition (see the list of Forms in section 16) for review by the College of Engineering Graduate Committee. The petition must be approved by the advisor and the Department’s Associate Chair for Graduate Research Programs. Copies of qualifying examination(s) taken at the previous institution must be attached. The petition is then submitted to the Director of Graduate Programs, 48 Cummington Mall, Second Floor, to be placed on the agenda for the next Engineering Graduate Committee meeting. The Graduate Committee will require a recommendation for a waiver from the Department.

11 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 Engineering Graduate Committee for an extension of time. The “College of Engineering Petition” form (see Section 16), with appropriate signatures should be submitted to the Director of Graduate Programs, 48 Cummington Mall, Second Floor. 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. The Engineering Graduate committee will review the petition and the student will be advised in writing of the outcome.

12 DISERTATION PROSPECTUS DEFENSE

12.1 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 for the purpose of obtaining the committee’s approval for the dissertation project. 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. A complete package of information and necessary forms can be obtained from the Department Academic Programs Coordinator. 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 Coordinator for any addition rules or restrictions.

12.2 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.
12.3 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 proposal should include:

1. a statement of the problem to be investigated
2. its background and significance
3. approach(es) to be followed for its resolution
4. preliminary results
5. anticipated timetable for completion
6. pertinent bibliography

The proposal should specifically document the anticipated contribution that this work will have to the body of knowledge. A separate page listing the proposed title, author's name, Research Advisor's name and an abstract of no more than 350 words must also be submitted.

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 Coordinator 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.

12.4 Oral Presentation of the Prospectus

A public oral presentation of the Prospectus must be help to describe the research and demonstrate the student's preparation. 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 schedule 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 Associate Chair for Graduate Research Programs, with a copy to the Department's Academic Programs Coordinator, two weeks before the Prospectus Defense. Necessary form(s) and description of defense procedures are available in the Department's Academic Programs Coordinator.

It is the Department’s responsibility to provide adequate publicity for the student’s Prospectus Defense.

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 or 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.

12.5 **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.

12.6 **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 Coordinator. 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.

12.7 **Registration after Passing Prospectus Defense**

If they have not yet met the requirement of 64 credits as outlined in Section 9.3, post-Bachelor’s Ph.D. candidates must enroll for a **minimum** of eight credits of dissertation or research each semester until the 64-credit requirement is met. If a post-Master’s Ph.D. student has not yet met the 32-credit requirement as outlined in Section 9.4, he/she must enroll for a minimum of eight credits of either dissertation or research credits each semester until they have met the requirement. Once all credit requirements have been satisfied, Ph.D. candidates must enroll for a minimum of two dissertation/research credits 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 **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.

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 Coordinator for any additional rules or restrictions.

13.1 Final Oral Defense Committee

The nucleus of the Final Oral Examination Committee is normally comprised of the Prospectus Defense Committee. The minimum Final Oral Committee size is five: the major Research Advisor (1st reader), three additional readers, and an examination Chair. 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 a scholar 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.

13.2 Ph.D. Dissertation Defense Abstract

The candidate submits the abstract, maximum of 350 words, along with a "Ph.D. Dissertation Defense Abstract" form (see the list of Forms in section 16) to his/her major professor for approval and signature. Once the abstract has been approved by the major Research Advisor, signed, and a tentative defense date determined, the student is responsible for bringing the signed form along with a copy of the abstract to the Department Academic Program Coordinator. This form must be delivered to the Academic Programs Coordinator at least three weeks prior to the proposed date of the dissertation defense.

The Department’s Academic Programs Coordinator notifies the candidate in writing if it is acceptable or needs revisions. Once a final abstract has been approved, it is the responsibility of the student to send an electronic (e-mail) version of the abstract to the Department’s Academic Programs Coordinator for announcement purposes.
13.3 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 Coordinator 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.

13.4 Arranging for a Final Oral Examination

In preparation for the Final Oral Examination, it is the candidate's responsibility, in conjunction with his/her Research Advisor, to appoint a Defense Committee. The Committee consists of those tenured or tenure-track faculty who participated in the Prospectus Defense and others to make a minimum of four readers. A minimum of two members must be tenured or tenure-track faculty in the Department. The chair, who cannot be a reader, for the Final Oral Examination is assigned by the department for a minimum total of five members. The Chair does not have to be a member of the student's academic department, but must be a member of the College of Engineering. If any Committee member is not a member of the Boston University faculty a "Request for Special Service Appointment in Engineering" form (see the list of Forms in section 16) must be submitted with his/her curriculum vitae to the Senior Associate Dean for Academic Programs.

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 Coordinator. 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. It is suggested that the candidate practice his/her presentation with his/her advisor prior to the actual presentation. The candidate obtains the signature of the Department’s Associate Chair for Graduate Research Programs indicating approval of the Committee and scheduled Defense date. The candidate then submits the form to the Department's Academic Programs Coordinator. 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).

The Department's Academic Programs Coordinator makes room arrangements. The name of the Chair, who cannot also be a reader, is provided to the candidate by the department. It is the student's responsibility to arrange a meeting with the Chair prior to his/her presentation. 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 Coordinator sends the signed original “Ph.D. Final Oral Examination” form to the Chair. The Chair brings the original form to the presentation.
13.5 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.

13.6 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.

13.7 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 Coordinator. It is the responsibility of the Department’s Academic Programs Coordinator to ensure that all necessary information is recorded with the University.

13.8 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 Department's Academic Programs Coordinator to have the Approval page verified BEFORE submitting it to the Library. The Department's Academic Programs Coordinator 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.

13.9 Library Submission

It is the Department’s Academic Programs Coordinator'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. When it is verified that the student has completed the necessary requirements, the Department’s Academic Programs Coordinator will initial the "Mugar Memorial Library Thesis and Dissertation Approval" form and allow the student to proceed to the Library.

The student is required to deliver the pink copy of the Mugar library form, signed by the Library representative, to the Department's Academic Programs Coordinator. After receiving the pink copy of the Library form, the Department’s Academic Programs Coordinator will submit the student's file to the Graduate Programs Office for final graduation review.

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.

14 GRADUATION

A "Diploma Application for the Degree of Doctor of Philosophy" form must be submitted by the deadline indicated in Section 15, or, at the time the dissertation is submitted to the Library, whichever is earlier. 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.

15 DEADLINES FOR Ph.D. STUDENTS

The College of Engineering has a uniform set of deadlines for all of its Ph.D. programs: http://www.bu.edu/academics/eng/graduate-program-deadlines/

16 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 Department website (http://www.bu.edu/me/resources/phd-resources/) and through the Department's Academic Programs Coordinator.

1. **Withdrawal/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 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. **Certificate of Full-Time Participation in Graduate Program** – 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 signature.

4. **Qualifying Exam Form** – Part A is to be completed in advance of the qualifying exam and approved by the chair of the Department Qualifying Exam Committee. Part B is to be completed by the student's exam committee and submitted to the Department's Academic Program Manager.

5. **Request for a Special Service Appointment in Engineering** – To be signed by the Department Graduate Associate Char and then submitted 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.

6. **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 Coordinator.

7. **Approval Page for the Final Dissertation** – To be signed by all committee members, except the Chairperson, and anyone else required by the department.

8. **Ph.D. Dissertation Defense Abstract** – To be signed by the major Research Advisor and submitted to the Department’s Academic Programs Coordinator.

9. **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 Coordinator for the appointment of a Chairperson.


11. **Boston University Mugar Memorial Library Thesis and Dissertation Approval** – Four page form to be submitted to the Department’s Academic Programs Coordinator for final approval prior to Library submission.

12. **Diploma Application** – To be signed by the student and then submitted to the Department's Academic Programs Coordinator.

13. **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.
14. **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.

17 **DIRECTORY**

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Additional information can be found at http://www.bu.edu/dbin/eng/directory/.