



Boston University College of Engineering
Division of Systems Engineering

Masters Handbook
2023-2024

Degree Requirements	3
Policies and Procedures	3
How to Register for a 900-Level Course.....	3
Masters Program Learning Outcomes	4
MS with Thesis Requirements.....	4
Finding a Thesis Advisor	5
Research Rotations	6
Final MS Thesis Presentation	6
Career & Professional Development.....	8
Forms.....	8
Apply to Graduate.....	9

The Systems Master's Handbook outlines pertinent University, College of Engineering, and Division policies and procedures.

Degree Requirements

All masters students are assigned an academic advisor when entering the program. The Graduate Programs Manager will notify incoming students about their advisor assignment prior to registration. The student's academic advisor can provide general information/guidance and help the student to complete his/her course registration.

[Masters Program Overview](#)

[SE MS Program Requirements](#)

[SE MEng Program Requirements](#)

[Engineering Practice Option](#)

[Specialization Option](#)

MEng and MS Program Planning Sheets are posted under the "Forms" tab, below.

Policies and Procedures

[Graduate Program Deadlines](#)

[Attendance, Course, Grade, Degree, Registration and other Policies](#)

[Student Bereavement](#)

[Student Records](#)

Independent Study and Mentored Projects

To register for [SE 951 Independent Study](#) or [SE 952 Mentored Project](#):

1. Download, fill out, and get your advisor's signature on the College of Engineering [Directed Study/Independent Coursework Petition Form](#).

2. Send the completed form to the [Division Graduate Programs Manager](#), NOT the Graduate Programs Office. The Division Graduate Programs Manager will obtain Division approval, register you for the course, and forward the final form to the Graduate Programs Office with a cc to you and your course supervisor.

Masters Program Learning Outcomes

The Division Program Learning Outcomes are designed to provide a given set of courses and other requirements so that students may acquire the knowledge, skills, habits of mind, and attitudes necessary to engage in a systems engineering related career on graduation.

SE Masters Program Learning Outcome

1. Apply knowledge of mathematics, science, and engineering to identify, formulate, and solve systems engineering problems.
2. Understand the impact of engineering solutions in a global, economic, environmental and societal context.
3. Use modern engineering tools and techniques to successfully practice the engineering profession in a variety of settings.
4. Use oral and written communication to convey technical concepts to engineers and non-engineers.
5. Collaborate as member or leader of a technical project team.

MS with Thesis Requirements

MS candidates choosing the thesis option must enroll in ENG SE 954 MS Thesis for at least 4, but no more than 8, credits toward their MS. Thesis work is likely to entail several semesters of research; as a result, completion of the master's degree usually requires more than one year.

Students are encouraged to discuss their research interests with faculty at the beginning of their master's program and enroll in their second semester. A research problem is selected after initial discussions between the research advisor and the student. The development of a thesis topic is typically a cooperative effort between the student and research advisor. Commonly, the advisor initially suggests a problem to be addressed, but the student is expected to contribute ideas and thought as to how to approach the problem.

MS Thesis candidates shall demonstrate their abilities for independent research and scholarship by completing a written thesis in their field of study. The thesis will be primarily guided by the

first reader (advisor), with the advice of the other member(s) of the Thesis Committee. The thesis should represent original scientific/engineering contributions that are appropriate for publication in a recognized peer-reviewed journal. The thesis is defended at a presentation open to the entire BU community and submitted to the Mugar Library to satisfy the requirements of the MS with Thesis degree.

Thesis Proposal

Before a student enrolls in ENG SE 954 Thesis, a Thesis Committee must be formed and the student must submit a [Thesis Proposal Form](#) to the [Division Graduate Programs Manager](#).

Thesis Registration

In addition to the Thesis Proposal, the student must submit a [Directed Study/Independent Coursework Petition Form](#) each semester

Thesis Committee

The Thesis Committee must have a minimum of two members, one of which must be an SE appointed faculty member. The student's research advisor will chair the thesis committee. The Thesis Committee is charged with assessing the appropriateness of the research problem and the student's preparation, based on the written proposal and the oral presentation. The Thesis Committee must approve that the Thesis is at a stage appropriate for scheduling the final presentation via their signature on the **Final Thesis Presentation form**; the advisor will also approve the masters thesis candidate's **Abstract Form**.

Special Service Appointment

If a researcher from outside the University serves on a student's committee, a [Special Service Appointment Form](#) must be completed and submitted to the Division Graduate Programs Manager for division approval. The completed form and a copy of the person's curriculum vitae, with the Associate Chair for Graduate Studies' signature, will then be submitted to the Graduate Programs Office.

Intellectual Property Policy (IPP) Agreement

Students who receive support from sponsored research programs or who make significant use of BU funds and facilities are required to sign the BU Intellectual Property Policy Agreement. Seek counsel with your faculty advisor about this policy pertaining to intellectual property. A signed form is required for thesis students. Click here for the [Intellectual Property Policy Agreement](#) and form (Appendix A).

Finding a Thesis 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 utilize the first one to two semesters to determine what their specific interests are in the field of systems engineering and identify the opportunities for research in a professor's lab. MS with Thesis students typically connect with their research advisors through (1) doing lab rotations and deciding upon a research area; (2) interacting with faculty through coursework and informal discussions. An easy way to find out what is available is to check the list of current Faculty Research Interests and SE Laboratory and Research Center Descriptions, available on the SE website.

Another valuable way of learning more about specific research opportunities is to speak with other graduate students who are currently working in the various SE faculty labs. The best measure for learning about working in a specific lab is to make an appointment to speak with the faculty member in charge of a lab you are interested in. Some useful questions to ask him/her are:

1. What projects are currently going on and what projects are planned for the near future?
2. What background is required to work in the lab?
3. How is the lab funded and is there the possibility of funds for a masters student? (Funding is not guaranteed for masters students and is limited to the base stipend rate with no other benefits.)
4. What expectations does the faculty member have of graduate students?
5. 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?

Once a student finds a research opportunity and has the consent of a faculty member to be his/her advisor, the process of developing a research project begins.

Research Rotations

Masters students considering a thesis may seek out laboratory rotations during the first year. This provides the students an opportunity to gain exposure to more than one research area and to help in identifying a good match with a thesis advisor.

Who Can Be A Thesis Advisor

Any full-time member of the SE faculty, or any affiliated or adjunct faculty member who has an appointment with the Division, is eligible to serve as a research advisor. The thesis advisor will supervise the student's thesis project and advise. MS with Thesis students are expected to choose a thesis advisor no later than the end of the second semester of matriculation. The thesis advisor is also the student's academic advisor.

Final MS Thesis Presentation

The Final Thesis Presentation is a public presentation of the candidate's thesis. 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 purpose of the Final Thesis Presentation is to ensure that the thesis constitutes a worthy contribution to knowledge in the candidate's field and that the candidate has attained an expertise in his/her field of research specialization.

Previous Masters theses are available for review in the Division. Please contact the Division Graduate Programs Manager.

Formatting Guidelines

Please refer to the [Guide for Writers of Theses & Dissertations](#) while preparing the thesis and abstract. These must conform to the requirements of the University Microfilms International.

Although students will have an opportunity to make final revisions to the thesis and abstract after their Final Thesis Presentation, they should not regard their Final Presentation version as a “rough draft.”

Register the Final Thesis Presentation

At least two weeks prior to the Thesis Presentation date, the candidate must submit [Division Defense Registration Form](#). Upon registration, the Graduate Programs Manager will circulate the abstract and final thesis presentation forms using Adobe Sign and will assist with scheduling a room, preparing the thesis announcement, and arranging catering.

Before registering the presentation, the candidate must have provided a copy of the thesis document to all members of the Final Thesis Presentation committee. It is the student’s responsibility for scheduling a date, location and time with all the Thesis Committee members for the examination.

Conduct and Length of the Final Thesis Presentation

The thesis chair should introduce the candidate and include a brief academic background description. The candidate should restrict the length of the examination to approximately one-hour. During this period, either the Thesis Committee members or audience may ask questions of clarification. The chair should guard against digression and inappropriate questioning during the presentation. After the presentation, a reasonable period of questioning will follow, and then the audience will be dismissed. The Thesis Committee may wish at this time to ask additional questions of the candidate. Following this additional questioning, the candidate should be excused and the committee should complete its assessment of the examination.

Assessment

The Thesis Committee is charged with assessing completeness of the research, contribution to knowledge, and the candidate’s mastery of his/her research area, based on the written thesis 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 Thesis Committee has reached a decision. The chair will advise the student of the committee’s decision. At this time the candidate will be advised of any changes that must be made to the final title, abstract or thesis document, with a deadline provided by the Thesis Committee.

Reporting

The College’s MS Final Thesis Presentation Form must be completed at the examination, with specific indication of whether the title, abstract and thesis are acceptable as they stand. If ALL

requirements are acceptable, the committee members should sign the signature pages of the thesis. If there are any revisions to be completed, these must be noted on the Final Thesis Presentation form. Thesis Defense Committee members should sign off on the form for the decision but refrain from signing the signature approval page on the thesis document until all conditions have been met. In the event faculty will be traveling at the time of library submission, then all but one (usually the advisor) Committee member may sign the signature page and the last signature will be added when all revisions complete.

Thesis Approval and Library Submission

The signatures of the Thesis Defense Committee members on the thesis signatures page, if not given at the Final Oral Examination itself, will indicate final approval of the title, abstract and thesis.

The Associate Chair for Graduate Studies gives final approval on the Final Oral Examination form. The student will then follow the [electronic submission guidelines provided by Mugar Library](#). The Division Graduate Programs Manager will provide departmental electronic approval for the student upon collecting the 1) signatures page and 2) title page.

The Division Graduate Programs Manager will handle the binding of thesis copies for the primary thesis advisor and the Division. Students are advised to order any personal copies from ProQuest.

Career & Professional Development

Many masters students engage in summer internships. (Note that international students are eligible to engage in an internship after two semesters of full-time study.) Students may work with the [College of Engineering Career Development Office](#) to find internship opportunities. Handshake is the Career Development Office's online system for job and internship listings, which is exclusively for BU undergraduate students, graduate students, and alumni.

Please refer to the Student Resources page and the [Career & Professional Development](#) tab for further detail on College and University resources available to students and alumni at every stage of their career.

Forms

- [Masters Activity Report Form](#)
- [Thesis Proposal Form](#)
- [Division Defense Registration Form](#)
- [Special Service Appointment Form](#)
- [Online Application to Graduate](#)

- **Program Planning Sheets**
 - [MEng Program Planning Sheet 2021-2022](#)
 - [MS Non-Thesis Program Planning Sheet 2021-2022](#)
 - [MS Thesis Program Planning Sheet 2021-2022](#)
 - [LEAP Program Planning Sheets](#)
- **Thesis Form**
 - [MS Thesis Proposal Form](#)

Apply to Graduate

The College of Engineering Application to Graduate can be completed in one to three steps, depending on whether you are applying to graduate with your Masters (upon completion of the PhD Prospectus Defense) or PhD degree. For additional details on requirements and submission dates, you can refer to the [Deadlines for applying to graduate](#).

Masters Application to Graduate

1. Download and complete a Program Planning Sheet (Forms tab, above).
2. Obtain an electronic signature on the Program Planning Sheet from your advisor.
3. Complete the [Online Application to Graduate](#) and upload your signed Program Planning Sheet.

PhD Application to Graduate

- Complete the [Online Application to Graduate](#).