
Proud of WHO WE
EXIT

PhD Orientation

Fall 2025

College of Engineering
Division of Material Science &
Engineering

BOSTON UNIVERSITY

Agenda

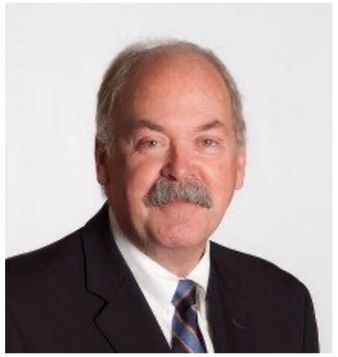
Welcome and Program Overview
Professor Basu, Associate Division Head

Resources
Alison Krasnor, Graduate Programs Manager

MSE Graduate Student Association

& Peer Mentoring
MSE GSA Team

MSE Team



David J. Bishop
Division Head

Soumendra Basu
Associate Division Head

Elizabeth Flagg
Division Director

Associate Division Head

Alison Krasnor
Graduate Programs Manager

Lea Sabra
Communications Manager

Points of Contact

Academic Issues

- Academic Advisor
- Graduate Programs Manager
- Division Director
- Associate Division Head

Non-Academic Issues

- Graduate Programs Manager
- Division Director

Advisor Roles:

Academic Advisor vs. Research Advisor

Academic Advisor

- Fall 2025 & Spring 2026
- Helps with course selection and general advising.

Research Advisor

- Summer 2026 (or earlier), until graduation
- Directs research
- Helps with course selection and general advising.

PhD Programs

Post-bachelors PhD:

- Minimum 64 credits, including MS requirements:
  - 4 Core Courses (16 credits)
  - 2 Concentration Courses from one area (8 credits)
    - Biomaterials
    - Materials for Energy & Environment
    - Electronic/Photonic Materials
    - Nanomaterials
  - Electives/Research (Remaining credits)

- MS 539 Intro to Materials Science & Engineering is recommenced for students without an MSE background.
- Only one 400-level course, with advisor approval, if needed as a pre-requisite for another course in the program.
- Apply to graduate with MS after passing Prospectus Defense.
- Only courses with grades of B- or better count.
- Cumulative GPA of at least 3.0 on courses used for graduation is required to graduate.

PhD Programs

Post-masters PhD:

- Minimum 32 credits applicable to the degree, all of which must be at the 500 level or higher.
- There are no structured course requirements, **HOWEVER**:
- The MS core + concentration structure is **STRONGLY RECOMMENDED**
  - CORE: needed to pass qualifying examination
  - CONCENTRATION: for research
- MS 539: Introduction to Materials Science and Engineering
  - Recommended for students without an MSE undergraduate or masters degree
- A minimum of 16 credits of research/dissertation coursework is required.
- Only courses with grades of B- or better count.
- Cumulative GPA of at least 3.0 on courses used for graduation is required to graduate.

PhD Qualifying Examinations

Qualifying Exam Section	Course	Next Offering
Section 1 (typical option)	MS 577 Electrical, Optical, and Magnetic Properties of Materials OR	Fall
Section 1 (students with a physics background may take this option)	PY 543 Introduction to Solid State Physics (instructor approval required)	Spring
Section 2	MS 503 Kinetic Processes in Materials	Spring
Section 3	MS 505 Thermodynamics and Statistical Mechanics	Fall

PhD Qualifying Examinations

Exam format
- Written and oral exam
- Oral exam based on written section
- Final result is based on both of the above

Schedule
- January, before Semester Start
- May, usually the week after Commencement

Possible outcomes
- Pass
- Partial Pass: retake section(s) of exam (1st attempt only)
- Fail: retake entire exam (1st attempt only)
- Fail: removed from PhD program

Math Requirement

Post-BS PhD students:

Complete with grade B+ or better one of:

- ENG ME 512 Engineering Analysis
- ENG EK 501 Mathematical Methods I
- ENG MS/EC 574 Physics of Semiconductor Materials
- ENG MS 508 Computation Methods in Materials Science
- ENG MS/ME 527 Transport Phenomena in Materials Processing
- Other graduate level courses can be petitioned for approval of MSE Graduate Committee **BEFORE** taking course

Post-MS PhD students:

- Complete Post BS requirement **OR**
- Submit evidence of successful completion B+ or better of equivalent course as approved by the MSE Graduate Committee

Teaching Requirement

- All MSE PhD students are required to teach (discussions, grading, and/or lab support, NOT classroom lectures) for two semesters
- Students must enroll in MS 801 or MS 802 the semesters they are teaching
- Requirement completed as G1, G2, or G3 students
- Students can support courses from ME, Physics, Chemistry, or be a Supplementary Instructor for an MSE core course (as G2 or G3 students only)

Timeline

Candidacy **Within 2 years of matriculation**	**Prospectus** Within 2 years of passing Subject Qualifying exam	**Dissertation** Within 5 years of attaining Candidacy
○ Subject Qualifying Exam ○ Must pass within 2 years of matriculating ○ Offered in May between Commencement & Memorial Day weekend and in January before classes start ○ Maximum of 2 attempts ○ Math Requirement ○ Stipend Increase, 10%	○ Advanced RCR Requirement ○ Prospectus Defense ○ Post-bachelors PhD students should apply to receive their Masters degree	○ Meet with Dissertation Committee annually to report progress ○ Defend dissertation ○ Deposit approved dissertation to library

Research Advisor & Doctoral Research Fellow Positions

- Matriculating students are (mostly) on MSE support for Fall ‘23 and Spring ‘24
- Doctoral Research Fellow (or RA) positions begin Summer ‘24

- Finding a Research Advisor
  - Some students enter the program with a specific research advisor and project in mind. No rotation is needed for such students

  - Others will use the first two semesters to find research advisors through lab rotations.
    - On finding a faculty supervisor in Fall or Spring, register for MS900 research .
    - Students with no advisor commitment after the first rotation must complete at least one more rotation during spring semester
  - **Inability to secure a research advisor by April 30, 2025 constitutes not making sufficient progress as graduate student**

PhD Funding Model

1st Year	2nd Year
$13,791.67/semester	$15,170/semester
Fall/Spring **Service Stipend** Graduate Teaching Fellowship Doctoral Research Fellowship	**10% raise over base.**
Fall/Spring **Non-Service Stipend** Dean's Fellowship Distinguished MSE Fellowship	**Must pass both:** PhD Qualifying Exam Math Requirement
Summer **Service Stipend** Doctoral Research Fellowship	**Service Stipend** Doctoral Research Fellowship Other Fellowship (NSF, etc)

* See MSE PhD Handbook, PhD Funding Information for further information.

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External Funding Bonus

Application Period: 7/1 – 9/30

- For a multi-year award, the student must apply each year.
  - Up to $3,000 per year.

- Must have an NSF, NIH, or HHMI individual predoctoral fellowship for which the student wrote a scientific grant that was subjected to rigorous review.

  - Other sources of funding will be considered.
  - Must maintain Satisfactory Academic Progress.

MSE PhD Travel Award

Students who have passed the PhD qualifying exam are eligible for a $500 Student Travel Award. The advisor must submit a nomination to the Associate Head, Professor Soumendra Basu, including:

1. a copy of the paper abstract, and
2. evidence that the paper is included in the conference/meeting program (e.g., web site containing the program or a page showing where the paper is scheduled in the program).

On completion of travel, the student will submit receipts for reimbursement.

BU Advanced Conduct of Research (RCR) Requirement

The RCR program educates students in core norms, principles, regulations, and rules governing the ethical practice of research.

College of Engineering doctoral candidates must complete the RCR requirement prior to scheduling the PhD Prospectus Defense.

Students will complete the RCR-specific CITI training and the RCR Course. The RCR course is a 1 credit, non-tuition bearing course (ENG EK 800) open to all PhD students and postdoctoral scholars. This 10-week course will meet once weekly for 50-minute sessions.

Supplemental Instruction (SI) in MSE Core Courses

What is SI?

Supplemental Instruction (SI) is an academic support program in MSE. Peer SI leaders are trained to engage students in group activities outside class hours to help them reinforce course concepts, prepare for exams, and cultivate strong study skills.

Why SI?

- Get help with CORE MSE courses.
- Peer-facilitated study sessions
- Learn and share study skills
- It’s free!

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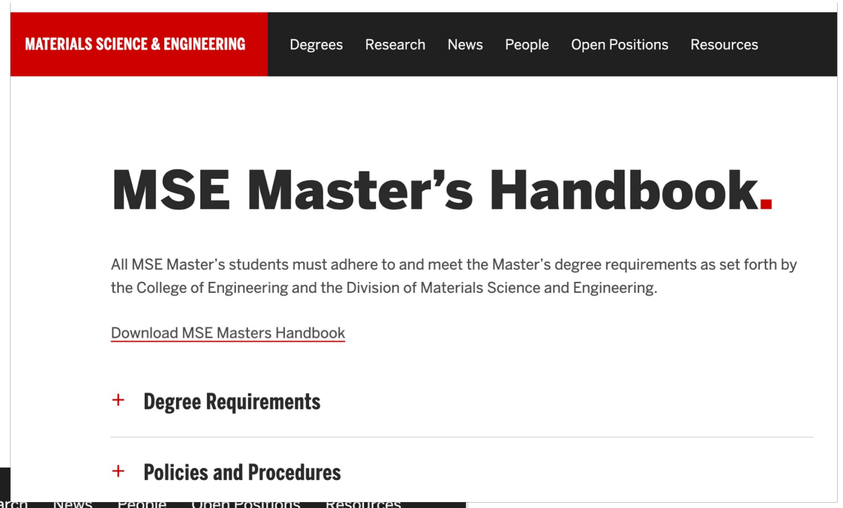
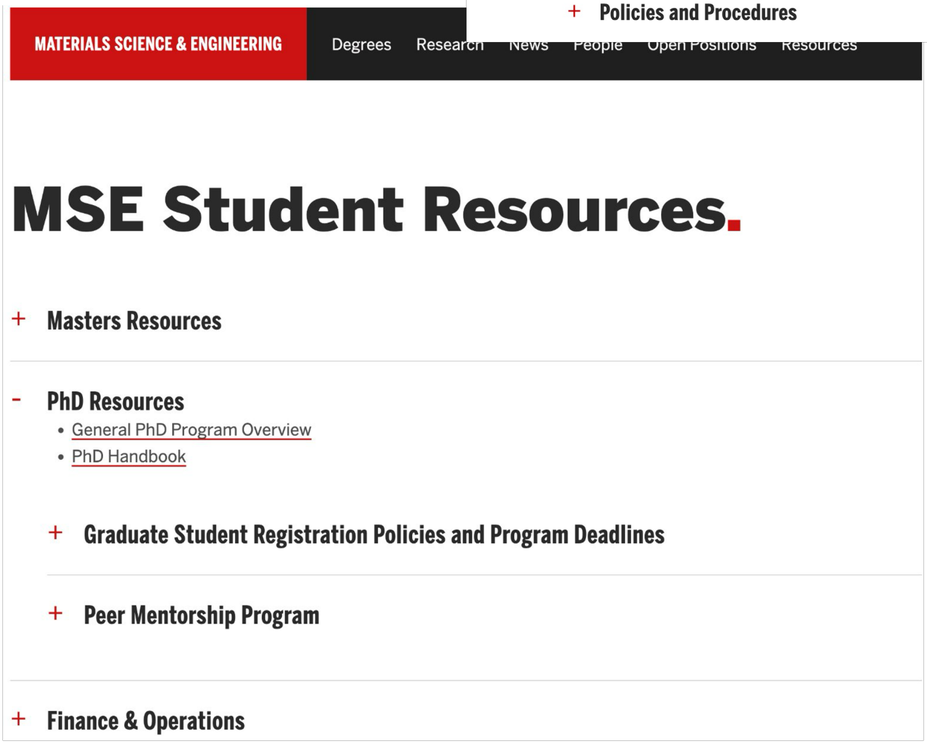
Guidance & Resources

Guidance

- Academic Conduct Code
- College of Engineering Graduate Bulletin
- MSE Masters Handbook
- MSE PhD Handbook

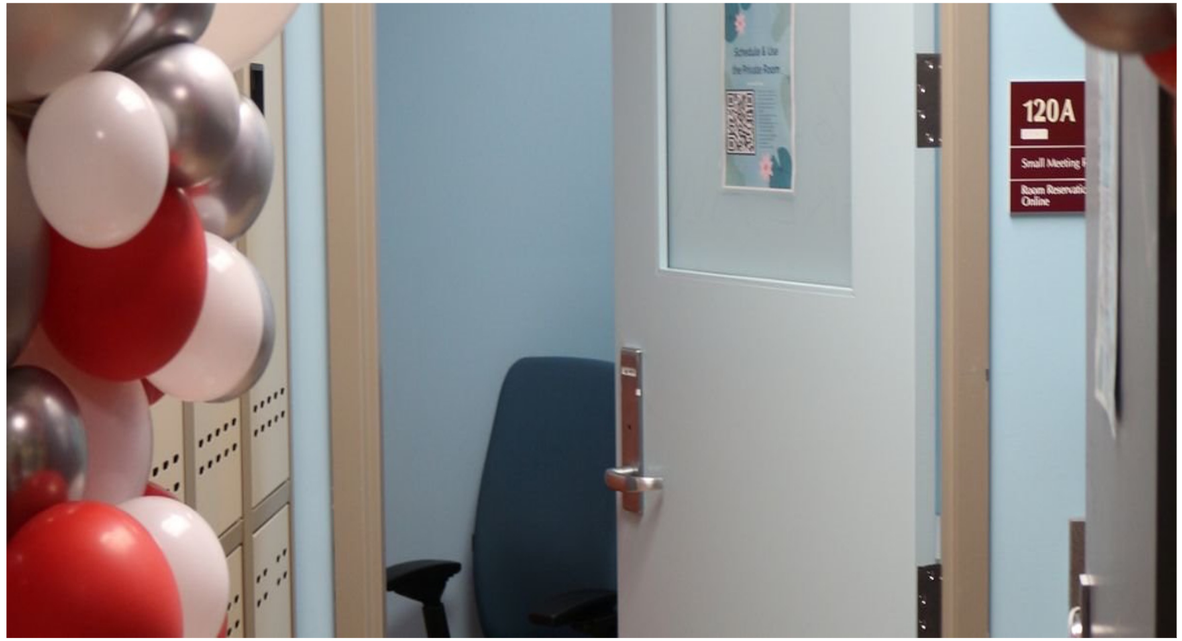




Guidance & Resources

Division Resources

- MSE Student Lounge & 1st Year PhD Desks, 15 Saint Mary's Street Rm 122
- MSE Conference Room, 15 Saint Mary's Street Rm 121
- Division Wellbeing Room
- Card Access is moving to a new system, new info coming.



University Resources

- Newbury Center (First-Gen)
- BU Out List (for LGBTQIA+ faculty, staff, students and BU community)
- Howard Thurman Center for Common Ground
- Student Health Services
- Educational Resource Center

Group Affiliations

- MSE GSA (MSE Graduate Student Association)
  Join ASM & MRS for FREE (after reimbursement)!
- SAGE (Student Association of Graduate Engineers)
- GWISE (Graduate Women in Science and Engineering)
- oSTEM (Out in STEM)
- NSBE (National Society of Black Engineers)
- SHPE (Society of Hispanic Professional Engineers)

MSE T-Shirt

- PICK YOURS UP
- 15 Saint Mary's Street, Rm 117
  While supplies last.

MSE Graduate Student Association & Peer Mentoring

2025-2026 Eboard

- **President:** Emily Ghosh
- **Vice President:** Catherine Wang
- **Secretary:** Miguel Moreno Tenorio
- **Treasurer:** Savannah Schisler

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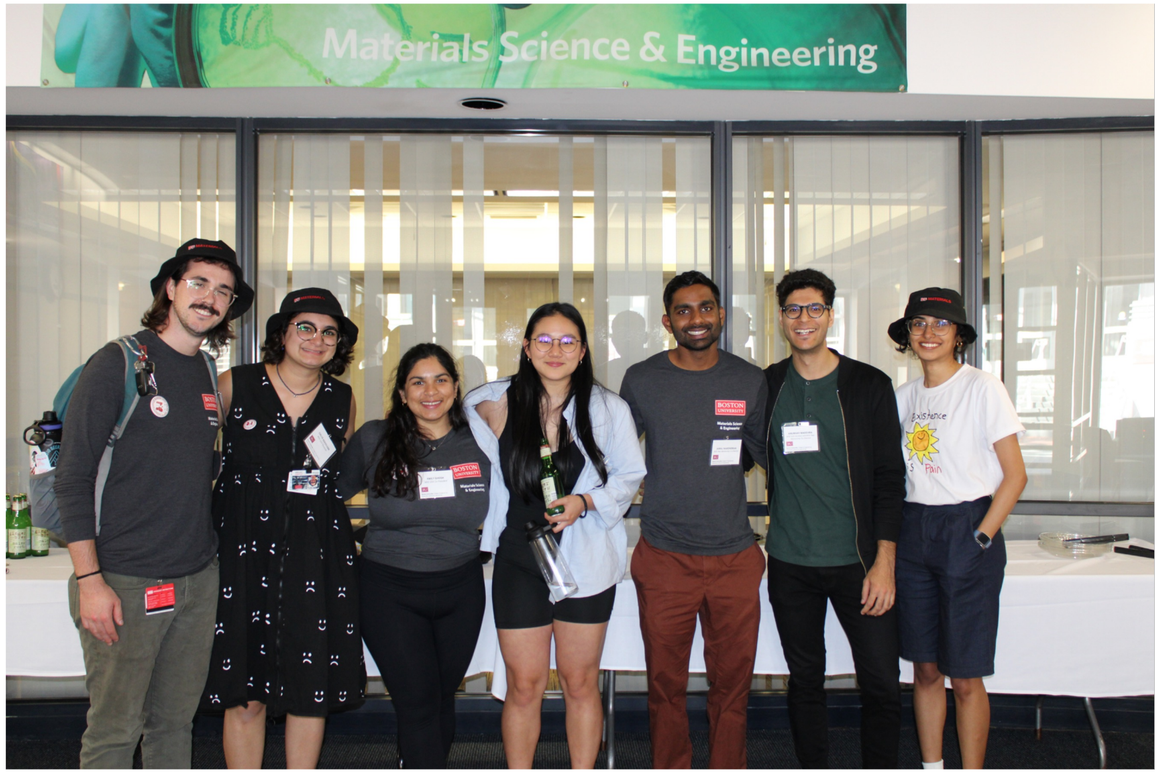
Who is MSE-GSA?

- We are the **Materials Science & Engineering Graduate Student Association**
- We seek to **build a stronger sense of community**
- Provides **professional development, networking, and social events** for graduate students interested in materials science & engineering
- We are materials researchers & students **(YOU!)**



MSE Graduate Student Association

Professional Development

Networking

Social Events

MRS & ASM

- Joint student chapter of MRS and ASM International
- BU Materials Division students also get **FREE** MRS and ASM memberships (requires reimbursement form)
- Conferences, Talks, Networking
- **2024 Materials Advantage Chapter of Excellence Award Winner**

MRS MATERIALS RESEARCH SOCIETY®

Advancing materials. Improving the quality of life.

ASM INTERNATIONAL

Join us!

Scan the QR code to check out our website, follow us on Instagram, nominate yourself for an Eboard position, and more!

Email: msegsa@bu.edu

Peer Mentoring

Interested in being mentored by a seasoned MSE grad student during your first year?

The **MSE Peer Mentorship Program** is a student-led initiative with the goal of helping incoming MSE students ease into their grad program and fostering a sense of community within MSE. Senior grad students mentor new students, providing information on a variety of different things such as **finding a research lab**, **learning about available resources at BU**, **getting to know the Boston area**, and more!

Questions? See the MSE Student Resources Page or contact the program Co-Directors:

Jairaj Narendran, jairajn@bu.edu
MSE 3rd Year PhD student

Matt Geib, geib@bu.edu
MSE 3rd Year PhD student

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Welcome to BU MSE!

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