

BROWN SCHOOL OF ENGINEERING

Ph.D. STUDENT HANDBOOK



BROWN

ACADEMIC YEAR 2024-2025

Welcome to the Brown School of Engineering!

We are glad that you have chosen to conduct your graduate studies at the Brown School of Engineering. Brown University has a proud history in American engineering education. Engineering at Brown is the third oldest civilian program in the country and the first program founded in the Ivy League. The School today is distinguished by outstanding students and faculty, an integrated school structure free from traditional departmental boundaries, a distinctive interdisciplinary curriculum, and a strong research environment.

The School of Engineering reflects the rigor, collaborative spirit, and creativity of its faculty and the excellence and innovative ethos of its students. Teaching and research in the School of Engineering reflects the unique position Brown holds in higher education – an institution that provides the close mentoring relationships characteristic of a liberal arts college and the intellectual excitement of a research-intensive university. Your acceptance into our highly selective programs indicates that we feel you have the capability and desire to contribute to the future of your field.

Note: This handbook is a supplement to the [Graduate School Handbook](#). Its format is intended to be viewed digitally (rather than in print), as it contains a large number of links to related university resources. The current digital version of this document can be viewed at:

<https://www.brown.edu/academics/engineering/graduate-study/graduate-programs-guide>

TABLE OF CONTENTS

I.	STATEMENT OF PURPOSE	4
II.	INTRODUCTION	4
III.	MISSION STATEMENT	4
IV.	Engineering Graduate Program Leaders and Representatives	4
V.	OFFICE OF ACADEMIC AND STUDENT AFFAIRS	5
VI.	UNIVERSITY POLICY INFORMATION	5
A.	Important University-Wide Policies	5
VII.	ETHICS AND PROFESSIONALISM	6
VIII.	NEW STUDENT INFORMATION	6
A.	Prospective Students	6
B.	Housing on Campus and Nearby	6
C.	New Graduate Student Orientation	7
D.	Email and Internet Access	7
E.	Acceptable Use and Computing on Campus	7
F.	Graduate Student Community Space	8
IX.	SAFETY TRAINING	8
X.	FINANCIAL SUPPORT	9
XI.	COMPONENTS OF PH.D. REQUIREMENTS	10
A.	Planning your coursework	10
B.	Overview of Requirements for Ph.D.	10
C.	The Progress Review	11
D.	The Preliminary Examination	11
E.	Optional Transitional Master's and Master's in a Secondary Field	12
F.	Specific Research Group Procedures	12
1.	Biomedical Engineering	12
2.	Chemical and Environmental Engineering	12
3.	Electrical and Computer Engineering	13
4.	Fluids and Thermal Sciences	13
5.	Materials Science	14
6.	Mechanics of Solids	15
G.	Academic Standing	16
H.	Grievance Procedures	17
XII.	RESEARCH AND TEACHING	17

A. Selection of a Research Topic	17
B. Initiating Your Research	18
C. Teaching Experience and Professional Development	18
XIII. DISSERTATION DEFENSE AND SUBMISSION	18
A. Dissertation Committee	18
B. Dissertation Defense	19
C. Dissertation Submission	19
D. Defense Checklist	19
E. Commencement	20
XIV. COMMUNITY RESOURCES	21
A. Funding Opportunities	21
B. Working with Engineering Grants Administration	21
C. Graduate Community	21
D. Wellness	22
E. Leaves of Absence	22
1. Types of Leave	22
2. Procedure to Request a Leave	23
F. Student Life Resources	23
G. Attending School Seminars and Talks	25
H. Writing Resources	26
I. Engineering Contacts	26

I. STATEMENT OF PURPOSE

This handbook is provided to the Ph.D. students at Brown University in the School of Engineering to help them navigate the process of obtaining their respective degrees. It does not replace the school's graduate advising, but is intended as a reference to provide supplemental information.

II. INTRODUCTION

This handbook serves as an aid for students who are making their transition to graduate-level education, and assists all graduate students working toward the successful completion of their degree requirements. It is each graduate student's personal responsibility to read and understand the information pertaining to graduate studies at Brown University in both this handbook and in the [University Bulletin](#).

III. MISSION STATEMENT

The Brown University School of Engineering educates future leaders in the fundamentals of engineering in an environment of world-class research. We stress an interdisciplinary approach and a broad understanding of underlying global issues. Collaborations across the campus and beyond strengthen our development of technological advances that address challenges of vital importance to us all.

IV. Engineering Graduate Program Leaders and Representatives	
Titles	Emails
Director of Graduate Studies (DGS) for Engineering	Robert Hurt
Co-Director of Graduate Studies (DGS), Biomedical Engineering	Michelle Dawson
Co-Director of Graduate Studies (DGS), Biomedical Engineering	Vikas Srivastava
Chemical & Environmental Engineering (ChEE)	Franklin Goldsmith
Electrical and Computer Engineering (ECE)	Daniel Mittleman
Fluids and Thermal Sciences (FTS)	Daniel Harris
Materials Science (Materials)	Lucas Caretta
Mechanics of Solids (Solids)	William Curtin

V. OFFICE OF ACADEMIC AND STUDENT AFFAIRS

Students with questions or concerns about academic policies and procedures should contact any member of the Office of Academic Programs and Student Affairs.

Name	Title	Email	Office	Phone
Celinda Kofron	Associate Dean of Educational Initiatives	Celinda_Kofron@brown.edu	B&H 316	863-9992
Carolyn Harris	Manager of Analytics, Curriculum, and Student Programming	Carolyn_Harris@brown.edu	B&H 314	863-6859
Kathleen DiOrio	Student Affairs Manager	Kathleen_Diorio@brown.edu	B&H 312	863-1296
Ann Wang	Student Affairs Coordinator	Ann_Wang@brown.edu	B&H 312	863-6843
Dary Chheng	Program Coordinator Institute in Biology, Engineering, and Medicine (I-BEAM)	Dary_Chheng@brown.edu	B&H 235	863-6007

VI. UNIVERSITY POLICY INFORMATION

A. Important University-Wide Policies

[Affirmative Action](#)

[Nondiscrimination and Workplace Harassment](#)

[Gender Inequity and Sexual Assault](#)

[Gender Discrimination and Sexual Violence - Title IX](#)

[Sexual Assault and Dating Violence](#)

The University Bulletin also includes a [General Regulations](#) section containing information on academic requirements, course registration, grading, exams, and [Student Conduct and Community Standards](#).

VII. ETHICS AND PROFESSIONALISM

Both Brown and the School of Engineering have strict policies regarding ethics and professionalism. Unethical behavior or any type of academic dishonesty will not be tolerated. As a graduate student, you are responsible for knowing and abiding by the [Student Conduct and Community Standards](#).

All students are expected to have read in full and be familiar with Brown's [Academic Code](#) and [Code of Student Conduct](#). In addition, all students conducting research must complete the University's program on ethics and responsible research conduct, [BEARCORE](#), which details responsible conduct of research.

VIII. NEW STUDENT INFORMATION

A. Prospective Students

The University prepares graduate students for distinguished careers in research and teaching, and for their role as experts in the public and private sectors. Doctoral students perform research at the highest level to advance knowledge in their fields. Brown students are distinguished by academic excellence, self-direction, and a collaborative style of learning. Faculty members advance research and scholarship while remaining deeply committed to teaching both graduate and undergraduate students.

B. Housing on Campus and Nearby

On-campus housing: At Brown the Graduate Student Housing Application process opens each year in **March** with limited rentals available. This on-campus housing has a lease period of 12 months, with contracts beginning in summer, and costing approximately \$950-\$1500/month. Further details can be found on the [Auxiliary Housing](#) website. Please contact [Ronni Edmonds@brown.edu](mailto:Ronni_Edmonds@brown.edu) with questions.

Off-campus housing: The majority of graduate students prefer to live off campus. Tips for your search: start early, as you are more likely to find economical choices that fill your needs. Research [neighborhoods](#) near Brown University, including Wayland Square, Wickenden Street, East Side, Fox Point, Hope Street area. Utilities (heat, hot water, gas, electricity, and water/sewer fees, Wi-Fi) are typically not included in monthly rent and should be budgeted in addition to monthly rent fees.

Apartment Resources:

www.brownuniversityoffcampus.com Search for privately-owned furnished and unfurnished rooms, apartments, houses, sublets, sabbaticals, and shared accommodations

graduatestudy.risd.edu/providence/neighborhoods-and-housing RISD off-campus housing guide

Sign up for the [Graduate Student Bulletin Board](#) listserv to find roommates for shared apartments (Brown email required).

More detailed information can be found on Brown's [Guide to Living off Campus](#).

C. New Graduate Student Orientation

At the beginning of each academic year, both the University and the School of Engineering hold new graduate student orientation meetings, and it is required that all new graduate students attend these meetings. The School of Engineering new graduate student orientation will be held on Thursday, August 29, 2024 at the Engineering Research Center. All new graduate students will be sent an agenda in advance. This is the ideal setting for you to meet the School's dean, associate deans, graduate advisors, faculty, staff, and your classmates and colleagues.

In addition to the School of Engineering orientation, students are invited to attend [Graduate School Orientation events](#). All orientation events are scheduled in advance of the first day of classes, which is Wednesday, September 4, 2024. We strongly encourage your attending all orientation events where you will receive excellent resources on navigating Brown University, answers to your administrative process concerns, and information about important campus community resources available to you.

D. Email and Internet Access

Accessing Accounts: Note that your Brown username (what you use to log into Canvas and Banner) and your Google login information are separate. For more information, see [About Your Brown Usernames](#).

Most on-campus and departmental communication is done by email and, by default, your brown.edu email is used. To activate your electronic services, you will need your Brown identification number. You received this number once you committed to attending the university. Follow the steps below to activate electronic services:

- Locate your Brown ID number at <https://myaccount.brown.edu/>
- Click on "Activate Here" under [Activate Your Brown Account](#)
- Enter the requested data on this secure site and click on "Continue"

Contact the [Office of Information Technology \(OIT\)](#) if you require assistance with this process.

Wireless Internet Access: Connect devices by visiting <https://ithelp.brown.edu/kb/52-brown-wireless>. For a browser less device like a printer, gaming system or Roku, see brown.edu/go/browserless

E. Acceptable Use and Computing on Campus

The computing resources at Brown University support the educational, instructional, research, and administrative activities of the University. As a user it is important to engage in these resources in a responsible, ethical, and legal manner. In general, acceptable use means respecting the rights of other computer users, the integrity of the physical facilities, and all pertinent license

and contractual agreements. If an individual is found to be in violation of the Acceptable Use Policy, the University will take disciplinary action including the restriction and possible loss of network privileges. Please visit the full [Acceptable Use Policy](#) on the [Office of Information Technology \(OIT\)](#) website.

Learn more about computing life at Brown through the [Office of Information Technology \(OIT\)](#) website. For questions prior to your arrival on campus, visit this site or contact a Help Desk Specialist by emailing help@brown.edu or call 401-863-HELP (4357).

F. Graduate Student Community Space

Following are graduate students' exclusive spaces on campus:

Graduate Student Lounge: The [Graduate Student Lounge](#) is a graduate student's exclusive space for events, meetings, or just hanging out with friends. The lounge can be accessed anytime using your Brown ID. Please check the availability using the GS Lounge Calendar and request the space using this [request form](#). The GSC Pantry is also located in this lounge in cabinets numbered three and four. Contact gsc_studentlife@brown.edu with any questions or concerns.

Rockefeller Library: The 2nd floor of the [Rockefeller Library](#), room #225, #226 & #227 are exclusively graduate students only spaces. You can directly reserve these conference/study rooms through this [link](#). These conference rooms can only be reserved for group studies or meetings.

Horace Mann: The 4th floor of [Horace Mann](#) is open to all graduate students for hosting meetings, events and studying from Monday to Friday from 8:30am - 5pm. Take a video tour to see how this space looks like. Email Graduate_School@Brown.edu to reserve this space and with any questions or concerns.

Grad Center Bar: Not exclusively a graduate students space, but The Brown [Graduate Center Bar](#) (GCB) is a great place to socialize with fellow graduate students, undergrads, and other members of the Brown community. The bar features a great selection of bottled beer and an eclectic and frequently rotated range of tap choices. The GCB is open from 4pm - 1am on Sundays through Fridays and 6pm-1am on Saturdays.

IX. SAFETY TRAINING

All Engineering Ph.D. students must attend a Safety Training Seminar prior to starting work in the labs. The [Engineering Safety Officer](#) informs all graduate students of the dates and times that these three-hour seminars are held. Failure to attend one of these seminars can revoke a TA or RA appointment.

Depending upon the nature of the particular research that a student becomes involved with, students might need to attend other safety trainings prior to having access granted to a lab (e.g., hazardous waste, laser safety, biosafety, radiation safety, etc.). A basic [Laboratory Safety Training](#) as well as more specialized training are often required, depending on the nature of your work and the type of lab. Laboratory safety courses are available through Brown's Office of Environmental Health & Safety (EH&S). Please visit the [EH&S](#) website to view available courses and descriptions of who is required to attend.

X. FINANCIAL SUPPORT

Brown University offers [substantial financial support](#) to doctoral students. All incoming doctoral students are [guaranteed five years of support](#) (with appropriate academic progress), which includes a stipend, full tuition remission, health services fee, and a health insurance subsidy. All commitments of student support are subject to students being on a funded research project and making satisfactory academic progress as determined by their programs of study. Doctoral students who have completed five years of enrollment and who are no longer supported by a faculty grant will enter into **Enrollment Satisfied, Requirements Pending (ESRP)** status (formerly known as Thesis Pending or TP status). This status means that the student is still considered a Brown student, but is no longer enrolled in courses, is no longer charged tuition, and no longer receives a stipend. For international students, this change in status may affect visa requirements. International students should work with Brown's [Office for International Student and Scholar Services \(OISSS\)](#) to understand the implications of this. Entering into this status means that this is the time when the student is immersed in dissertation writing and preparing for their defense. If the student is on a grant-funded project, however, the student is then exempt from entering into **Enrollment Satisfied, Requirements Pending** status until the student either defends or their grant-funded support ceases to exist.

All students entering the Graduate School with any form of financial support are required to complete an Employment Eligibility Verification Form (I-9). Please note: The I-9 cannot be completed without a valid Social Security Number or receipt proving that a Social Security Number has been applied for. [See additional details here.](#)

Current Ph.D. students are eligible for [conference travel funds](#). Graduate students who present at academic conferences can apply to the Graduate School for up to \$650 per fiscal year (July 1 – June 30) to cover travel-related expenses. Please apply early because funds are limited.

There is also additional funding (up to \$1000) available through Engineering for graduate students presenting at research or academic conferences, in person, or virtually. Please note that students traveling to attend these workshops, meetings, or conferences without presenting are not eligible for this award. You can apply by submitting [this form](#).

XI. COMPONENTS OF PH.D. REQUIREMENTS

A. Planning your coursework

Each Ph.D. program in engineering is custom to the learner. Ph.D. students should discuss the courses they would like to take with their advisor when they arrive, to create a program that best matches their intended area of research and is aligned with their previous coursework.

During the first two years of study, every Ph.D. student is expected to meet at least once a semester with your advisor to review and discuss your fulfillment of course requirements (please feel free to call these meetings yourself when you are ready to discuss.)

The normal residence requirement for the Ph.D. degree is the equivalent of three years of full-time study beyond the Bachelor's degree (e.g., 24 tuition units). At least two semesters beyond the Master's degree must be spent exclusively in full-time study at Brown, although most engineering Ph.D. students spend four to five years in residence at Brown.

Students in the Ph.D. program typically take a comprehensive series of courses in the area of their expertise as well as several other courses in mathematics, physics, engineering, and other related disciplines. The course ENGN 2980 Special Projects: Reading, Research, and Design is designed for a student to enroll in to represent their academic effort during their research semesters. The number and choice of courses is made in close consultation with the student's advisor who must approve the student's choice at the beginning of each semester.

B. Overview of Requirements for Ph.D.

To graduate with a Ph.D. degree, a student must attain candidacy through passing a Qualifying or "Preliminary" Exam and complete a dissertation that embodies the results of original research and gives evidence of high scholarship. Ph.D. program information, general requirements, and procedures for all research groups can be found in the Program Guide on the School of Engineering web site, linked below:

<http://brown.edu/academics/engineering/graduate-study/phd-requirements>

The requirements for a Ph.D. degree in Engineering consist of successfully completing:

- Core and advanced courses (as advised by area)
- A preliminary exam (in some programs referred to as a "qualifying exam") by the program milestone date (see table in Section F)
- An original investigation under the sponsorship of a faculty member leading to a final dissertation and dissertation defense examination.

C. The Progress Review

The progress of Ph.D. students is reviewed early in the program of study, before students attain formal Ph.D. candidacy status. Each research group in the School of Engineering has its own system for administering this Progress Review, as described in Section F below. For Progress Reviews that involve student presentations, the student should contact [Kathleen DiOrio](#), Student Affairs Manager, between two and four weeks prior to the date you have chosen for that Progress Review. Students should provide Kathy the name of their advisor, their committee members (if appropriate), and the Graduate Representative from your area of research as well as the date, time, and location of your review. You may reserve a room through the School of Engineering [Room and Equipment Reservations](#). Check the room's calendar first – before completing the reservation form – to confirm availability for the date and time you wish to use it.

In addition to the Progress Review, each graduate student will receive feedback on the progress and status three times per year by their advisor or the group graduate representative. Advisor assessments are entered on an on-line form at the end of each semester (fall, spring, and summer) and students are informed of their assessment and current status in writing. Students with performance deficiencies in coursework or research will receive more detailed written feedback from which a performance improvement plan can be developed. Students with persistent deficiencies may be terminated from the program following consultation with the advisor, graduate representative, SoE graduate director (DGS), and the Brown graduate school.

D. The Preliminary Examination

This is a comprehensive examination that covers the student's main areas of expertise and serves to advance the student to formal Ph.D. candidacy. Note that some joint programs may refer to the Preliminary Exam as a "Qualifying Exam". Requirements for this exam are determined by area. To remain in good academic standing, the exam must be taken no later than the sixth semester of doctoral study for a student entering with an Sc.B., and no later than the fourth semester of doctoral study for students entering with an Sc.M. (see table in Section F for details). The exact timing and format of the exam varies among the different research groups. Details are outlined in the sections below.

The results of the examination are presented to the Graduate Committee along with the student's academic record and the recommendations of both the group's Graduate Representative and the student's Ph.D. faculty advisor. The Graduate Committee then decides whether to certify the student as a candidate for the degree of Ph.D. in Engineering. In the event of a failing grade, the Graduate Committee will decide whether to re-examine the student, require remedial action, or to request their withdrawal from the graduate program.

To schedule your Preliminary Examination, please contact [Kathleen DiOrio](#), Student Affairs Manager, at least two weeks prior to the exam, providing the name of your advisor, your committee members, and the Graduate Representative from your area of research, as well as your major and minor areas of research and the date, time, and location of the exam. You may reserve a room through the School of Engineering's [Room and Equipment Reservations](#). Check

the room's calendar first – before completing the reservation form – to confirm its availability for the date and time you wish to use it.

E. Optional Transitional Master's and Master's in a Secondary Field

Students have an opportunity to earn a transitional Master's Degree (Sc.M.) en route to their Ph.D. This transitional degree recognizes a significant level of academic achievement beyond an undergraduate degree. Minimum requirements consist of eight courses. Approval of the request for a transitional degree is not guaranteed. The student's performance must be reviewed and the request must then be granted by the program.

The Open Graduate Education (OGE) program allows select Brown doctoral students to pursue a Master's degree in a secondary field. The objective of this program is to enable students to combine fields in unique ways and acquire expertise in more than one area. Visit the [Graduate School](#) website for more information on OGE program scope and details.

F. Specific Research Group Procedures

Each research area group administers their respective Ph.D. program and defines the details of coursework, the Preliminary Exam, and other requirements (e.g., Progress Review.) These requirements, along with the details of each group's administration of the preliminary examination, are outlined below.

1. Biomedical Engineering

Students must complete coursework, pass a qualifying examination, and complete and publicly defend a doctoral dissertation in Biomedical Engineering. Please visit the [BME PhD Program website](#) for the complete Guidelines for the Ph.D. in Biomedical Engineering.

2. Chemical and Environmental Engineering

Progress Review: An in-depth faculty review of the student's progress at the end of the 2nd semester in the program. This report is shared with the student in writing.

Preliminary Examination: Before the beginning of the 5th semester in residence, the student will prepare and present a proposal for his or her research consisting of a written document followed by an oral examination of approximately two hours' duration presented to a faculty committee of not fewer than three members, including the advisor. This committee is expected to become the student's Thesis Committee and will annually review the student's progress. The document and presentation should describe a plan for original research including scientific or technological motivation, background on the relevant literature, a statement of objectives, preliminary research results, and a research plan with description of methods. The document should be submitted to the committee no later than two weeks prior to the oral portion of the exam. During the presentation, the student will be expected to demonstrate a sound grasp of the fundamental concepts and methodologies of the field, not limited to the specific research proposed. The committee reports to the Engineering Graduate Committee on the outcome of the

examination which covers the document, oral exam, and a review of the student course work and research progress to date. If the performance is unsatisfactory, the committee will also make a recommendation on whether or not the examination may be repeated after a certain time has elapsed.

Annual Committee Meetings: To maintain “good” academic standing, the student must hold an annual committee meeting by May 1st of each academic year following the preliminary examination. During this meeting, the student shall present to the committee a summary of their progress over the past year, any obstacles encountered or particular successes, and their plans for the coming academic year. The student must turn in a signed committee meeting form with Engineering Student Affairs by May 1st. The student is free to change the composition of the committee in consultation with their advisor; if this occurs, it should be noted on the form along with the reason for the change.

Minor Area: The student will, in consultation with their advisor, select one minor area of study satisfied by passing at least two courses forming a cohesive subject but distinct from the student’s main discipline. Proficiency is demonstrated by receiving grades of B or higher in the courses constituting the minor.

3. **Electrical and Computer Engineering**

Progress Review: An oral presentation of approximately 40 minutes duration to a forum of several faculty at which graduate students summarize their research progress by the end of October in their 3rd semester (second year in residence). The academic advisor, plus a minimum of two or more members of the faculty, will formally evaluate this presentation and make a recommendation to the Engineering Graduate Committee regarding the student's ability to continue in the Ph.D. program and to undertake doctorate-level research. Students normally prepare for this examination by completing ENGN 2980 *Special Projects: Reading, Research, and Design*, and by conducting independent research during the summer months.

Preliminary Examination: With the approval of their academic advisor, students must choose a Preliminary Examination Committee consisting of four examiners. These examiners will conduct an oral examination of the student no later than the end of the 6th semester in residence. A minimum of two examiners must be faculty in the student's major research area(s). The two other examiners must be faculty in minor areas outside the student's immediate research area. The Preliminary Examination will presume that students are prepared in two minor areas outside the student’s main expertise.

Minor Areas: Students are prepared in two minor areas outside the student’s main expertise by completing courses in each of the chosen minor areas in consultation with their advisor. These areas will be represented by two examiners in their oral preliminary examination.

4. **Fluids and Thermal Sciences**

Progress Review: An in-depth faculty review of the student’s progress at the end of the 2nd semester in the program. This report is shared with the student in writing.

Preliminary Examination: Before the end of the 5th semester in residence, the student should take the Preliminary Examination which establishes Ph.D. candidacy. The student should prepare a written document describing a plan for the student's own Ph.D. research including scientific or technological motivation, background on the relevant literature, a statement of objectives, preliminary research results, and a research plan with description of methods. The research proposal should be submitted to the committee who are expected to provide feedback.

The student should then schedule an oral presentation and defense of the research proposal. The committee members and any other interested faculty should participate in the presentation and exam. During the presentation, the student will be expected to demonstrate a sound grasp of the fundamental concepts and methodologies of the field, not limited to the specific research proposed. The advisor and Graduate Representative will work with the candidate to define which fundamental areas the student should be able to show proficiency in during the oral examination. The committee reports to the Engineering Graduate Committee on the outcome of the examination which covers the written proposal, the oral presentation, the oral exam, and a review of student coursework and research progress to date.

As a guideline, the proposal should be 15-25 pages (1.5 spacing; not including cited references) and should be professionally formatted in a manner similar to a research publication. The document must be submitted to the exam committee at least two weeks prior to oral defense. For the oral proposal defense, the student should be prepared to present for 30 minutes and the entire exam should last less than two hours.

Minor Areas: The student will, in consultation with their advisor, select one minor area of study satisfied by passing at least two courses forming a cohesive subject, but distinct from the student's main discipline.

5. Materials Science

Progress Review: This is the written portion of the preliminary exam taken at the end of the 4th semester. This exam consists of two parts to be completed in two three-hour sessions on two successive days. On the first day, students will be examined on thermodynamics and kinetics, paralleling the course work in ENGN 2410 and ENGN 2420. On the second day, students will be examined on mechanical properties and crystallography, paralleling the course work in ENGN 2430 and ENGN 2490.

Preliminary Examination: Students complete the oral portion of their preliminary exam through a presentation of their proposed research in their 5th semester. In preparation for this presentation, they will be responsible for reading and understanding a number of seminal papers (typically on the order of 10) critical to the completion of their research. These papers will be chosen in consultation with the student's advisor and another faculty member chosen by the student and his/her advisor. During the presentation, the student will be expected to demonstrate understanding of the important scientific and technical issues in his/her proposed research, as well as an understanding of the relevant issues contained in the assigned papers.

Minor Areas: Each student must show proficiency in two minor areas of study. Proficiency is demonstrated by receiving grades of B or higher in the courses constituting the minor. Two

courses are required to fulfill each of the minors, of which at least one per minor must be a 2000-level course. The choice of appropriate courses for the minor areas will be determined by the Materials Science Graduate Student Representative. The sequence of ENGN 2010 and ENGN 2020 may be used to fulfill the minor requirement in the area of applied math.

6. **Mechanics of Solids**

Progress Review: The progress review is typically administered during the 3rd semester in residence. Changes to this timeline are acceptable subject to the approval of the student's research advisor and the Graduate Representative for Mechanics of Solids. The progress review includes a 30-minute oral presentation of independent research work by the student based either on a project in progress or on completed work and a review of progress in the academic program of study by the examination committee. The examination committee consists of the student's advisor, the Graduate Representative for Mechanics of Solids, and at least one additional faculty member of the student's choice from the Mechanics of Solids group. Depending on the student's research topic, additional faculty from outside Mechanics of Solids may be added to the committee.

The committee's recommendation to the Engineering Graduate Committee following this review as to whether or not a student will be allowed to continue will be based on an evaluation of the research presented and achievements in formal course work. If a student fails the examination once, they will be given an opportunity to repeat. Since students enter the graduate program with diverse backgrounds, this review should establish whether or not deficiencies still exist in a student's preparation and if so, they will be advised on a path for improvement to correct any deficiencies prior to taking the Preliminary Examination their second time. If they fail a second time, they will be required to withdraw from the Ph.D. program.

Preliminary Examination: The Preliminary Exam typically takes place during the student's 5th semester in residence. However, as for the Progress Review, changes to this timeline may be requested and are subject to the approval of the student's research advisor and the Graduate Representative for Mechanics of Solids. The Preliminary Examination is an oral examination approximately two hours in duration and designed to test the student's knowledge of the major field (one hour) as well as knowledge of two minor fields (30 minutes each) selected by the student and their research advisor. The student is expected to demonstrate a sound grasp of the fundamental concepts and methodologies of the major field and to demonstrate a proficiency in specific topics in the minor areas. The examination committee consists of a major area examiner, one examiner in each of the two minor areas, the Graduate Representative, and the student's research advisor. This committee reports on the outcome of the examination to the Engineering Graduate Committee. If the performance is unsatisfactory, the committee makes a recommendation as to whether or not the examination may be repeated after a certain amount of time has elapsed.

Minor Areas: The Preliminary Examination will presume that the student has a level of knowledge in each of two minor areas corresponding to successful completion of two graduate courses in each of the minor subjects. Possible minor subjects include applied mathematics, materials science, physics, biology, geology or another discipline in engineering or science. If

applied mathematics is to be one of the minor areas, two courses beyond ENGN 2010 and ENGN 2020 or equivalents should have been successfully completed.

G. Academic Standing

The university has four official statuses for graduate student academic standing: Good, Satisfactory, Warning, or Termination. The School of Engineering's Student Affairs Office, together with the Director of Graduate Studies (DGS) maintains an updated and comprehensive census of the status of each student in his/her graduate program.

Advisors should update students on a regular basis regarding their academic status. A student who believes they are overdue for an update should contact their advisor to request a meeting to review their academic standing. Students should receive written notification following the successful completion of each academic milestone in their program, if there is a delay in written notification being provided, the student can request it.

Students in **Good** standing are making both good and timely academic progress. No more than one incomplete can be carried on a student record in good standing.

To be in Good standing, a student is expected to:

- Be actively working with a faculty advisor who is supporting their tuition, stipend, and fees
- Passed three approved courses each semester if a Teaching Assistant, or four courses if holding a Fellowship; then passes or is excused from taking the remainder of the "core" courses by the end of four semesters of graduate study at Brown
- Achieves the following core course grade record: No NC's and at least 50% B's or better by the end of two semesters and no remaining NC's or I's and 50% B's or better by the end of four semesters. It is expected that all core courses will be taken ABC/NC.
- Pass the Preliminary or Qualifying Exam by the deadline set by the program (4th or 6th semester)
- Satisfactorily performs any teaching and/or research duties. A student failing to meet at least one of these criteria is not in Good standing unless a prior exception has been made by the Dean in consultation with the Director of Graduate Study.

Examples of exceptional circumstances include illness, inadequate preparation for some graduate courses and/or postponement of the Qualifying Exam, or personal problems. A record of any exception and the relevant reasons will be kept by the Chair and the Director of Graduate Study along with each student's course grades, Qualifying and Preliminary Examination results, and current standing.

Satisfactory standing indicates that a student has encountered difficulties of some kind – inadequate performance or slow progress in course work, research, writing, etc. Two or more incompletes will, at minimum, result in a shift from Good to Satisfactory standing. This status level has no immediate impact on funding. If the concerns impacting a student's status are not resolved, the student will move on to Warning status.

Warning status signals chronic or severe problems. Students with unsatisfactory progress will be placed on warning status and given a written notice of their deficiencies and the consequences of those deficiencies. Students will receive clear, written instructions of the steps to be taken (if possible) to regain Good or Satisfactory standing, and date-specific deadlines (typically one semester) for recovery. Such notice should be communicated every semester that a student is on Warning status. Warning could lead to an immediate removal of funding depending on the severity of the problem. If the deficiencies are not resolved by the specified deadline, the student on warning can be moved to termination.

Termination status signals severe and irrevocable problems. Termination indicates an immediate removal of matriculation/enrollment status as well as all forms of financial support.

H. Grievance Procedures

There are several avenues available for graduate students who are experiencing a conflict or feel they are being treated unfairly by another member of the university community. Students are encouraged, when possible and as appropriate, to attempt to resolve the difficulty through discussion with the other person or persons involved.

The student is also encouraged to consult with the School of Engineering Director of Graduate Studies or, if the Director of Graduate Studies is an involved party, with the Dean of Engineering with the aim of securing clarification and advice. Other senior faculty are likely to be valuable sources of clarification and advice. Graduate students should also consider conferring with the University Ombudsperson, a Graduate Representative from the relevant academic unit, and/or other campus resources.

If none of the above options result in a satisfactory resolution, then a graduate student may file an official grievance with the Graduate School. The grievance process can be utilized by graduate students pursuing concerns with either other graduate students, faculty, or academic units, such as departments. For information on grievance procedures, how to write a grievance, and which supporting documents to include, please review:

<https://www.brown.edu/academics/gradschool/graduate-student-grievance-procedures#scope>

XII. RESEARCH AND TEACHING

A. Selection of a Research Topic

Students may enter graduate school without a clear preconception of their intended research field and should use the first year to refine their research interests through courses, colloquia and seminars, and informal discussions with faculty and other graduate students to help identify a field and join a research group. Students are responsible for finding an advisor for the research and dissertation requirements. In most cases, the same faculty member will serve as the advisor for both requirements. However, in infrequent cases, the student, the faculty member or both

may elect to not continue working together and the student will be responsible for finding another advisor.

B. Initiating Your Research

The research requirement varies by each of the research areas in the school. Students may anticipate a timeline similar to the example laid out below, but should consult with their advisor for what is expected in their specific area:

- By March of the first year, the student should have selected an advisor and two additional committee members – one, a member of the Engineering faculty, and one from outside the School of Engineering, or within Engineering but outside your research group (these committee members should also be approved by your advisor)
- By April of the first year, the student should have their intended research topic under consideration
- In fall of the 2nd year, the student should be prepared to communicate their research topic to their selected thesis committee
- By the end of the 2nd year, the student must complete the University's program on ethics and responsible research conduct, [BEARCORE](#), which is an eight-hour, in-person training program that is supplemented by online instruction.

C. Teaching Experience and Professional Development

Doctoral programs train students to become educators as well as researchers. The successful dissemination of research also depends on teaching ability; therefore, teaching is an integral part of graduate education. All Ph.D. students are expected to train as teaching assistants for at least one semester. This requirement can be waived with approval of the Director of Graduate Studies.

The University provides a multitude of resources for teaching and professional development, including:

- [The Harriet W. Sheridan Center for Teaching and Learning](#) for teaching workshops
- [Effective Performance: Improvisation and Performance Techniques for Graduate Students](#) - a workshop series on effective teaching communication
- [The Writing Center](#) for peer support and writing and publication advising

XIII. DISSERTATION DEFENSE AND SUBMISSION

A. Dissertation Committee

The Dissertation Committee consists of the student's advisor, one faculty member from the specific research area, and a third faculty from outside of the student's research area (but usually from Engineering). If the proposed committee includes faculty from outside of Engineering or from another university, first seek approval from the Engineering Director of Graduate Studies.

B. Dissertation Defense

You will benefit from a periodic review of Brown's [dissertation guidelines](#). The dissertation must complete the proposed work, satisfy the requirements of the Graduate School, and meet the highest standards of both content and presentation. The student must defend the dissertation at an oral presentation where the first Q&A session is open to the public. The defense will take place once the advisor determines the student is ready to defend and the written thesis is in a condition that is defensible, which means that the thesis is completely written and all chapters, front material, and references can be provided to the advisor for review. The student should then provide a hard copy of the thesis to the advisor and set up a defense date and time.

Please contact [Kathleen DiOrio](#), Student Affairs Manager, at least two to four weeks prior to your anticipated defense date. You will need to complete a Defense Information Form, which can be provided via email or in person through the Student Affairs Office, Barus and Holley Room 312. You may reserve your presentation room through School of Engineering [Room and Equipment Reservations](#). Check the room's calendar first – before completing the reservation form – to confirm its availability.

A complete draft of the dissertation must be presented to the committee and department at least four weeks prior to the defense.

C. Dissertation Submission

Students submit a copy of their dissertation to their advisor. **Once reviewed, a final copy must be submitted to the Graduate School on or before the first business day in May.**

For detailed Ph.D. dissertation guidelines, please visit:

<https://www.brown.edu/academics/gradschool/dissertation-guidelines>

D. Defense Checklist

A useful checklist summarizing the thesis defense process is provided below. Before the defense, please be certain you have reviewed and followed this planning checklist:

- 1. Set a date and time with your Thesis Committee
- 2. Confirm that one member of the faculty who is not on your committee will be present for the defense, if required by your program
- 3. At least two weeks prior to your defense date and time, email [Kathleen DiOrio](#), our Student Affairs Manager, stating:
 - a. Your advisor approved title and abstract
 - b. A URL for your dissertation that is externally accessible
 - c. Your proposed defense date and time and the room you have reserved
 - d. The name of the faculty member who is not on your committee who will attend

Kathleen will send an informal announcement to the faculty for attendance at the

defense. If not enough faculty can attend, the student will be asked to find a new date and time, if feasible, still providing Kathleen two to four weeks advance notice of the new date.

At least **two weeks** before the defense:

- Complete the Dissertation Defense Information Form** and submit it to [Kathleen DiOrio](#) who will obtain the appropriate signature and submit the form to the Graduate School.

VERY IMPORTANT NOTE: If you do not complete this information form and submit it on time, the paperwork will not be available on the day of your defense and you will need to reschedule.

After a successful defense:

ALL completing doctoral candidates are required to submit the paper or electronic documents listed below. The title page and abstract are to be sent electronically to [Barbara Bennett](#), the Graduate School's Academic Affairs Manager. If an item from the list below is missing or incomplete, the dissertation will not be accepted and the candidate's degree will not be conferred. This online submission system will send notifications when each document has been received and approved by the Graduate School.

- Ph.D. Exit Survey for the Brown University Graduate School; you may forward your email receipt
- [Survey of Earned Doctorates](#), National Research Council (the NRC sends the certificate directly to the Graduate School)
- The title page; this may be sent by email
- The abstract; this may be sent by email
- The original signed signature page

Visit the Graduate School website for [additional information about dissertations and required documentation](#). If you have any questions after consulting the website, please contact Barbara Bennett in the Graduate School (barbara_bennett@brown.edu or call 401-863-2843).

E. Commencement

Graduate students intending to complete in May must follow the [essential steps to prepare for Commencement](#) which provides information on submitting an application to graduate (required), registering to attend (required), regalia, rehearsal, and other important information.

Please pay close attention to commencement announcements from the Graduate School. For updated information, frequently visit:

<https://www.brown.edu/academics/gradschool/about/commencement>

XIV. COMMUNITY RESOURCES

A. Funding Opportunities

Brown Ph.D. students have been very successful in applying for and winning external funding. Such funding is both very prestigious on your CV but can also make you eligible for a [stipend incentive bonus](#). [Strategic Funding Opportunities](#) is a collection of potential funding opportunities designed to aid graduate students and postdocs in the pursuit of their academic, research, and career goals. This list was compiled and is maintained by the [Corporate and Foundation Relations](#) and the [Office of Research Strategy and Development](#).

[OVPR Graduate Student Resources](#) offers external funding resources and a list of helpful tips curated by Brown's Office of the Vice President for Research (OVPR).

[SPIN \(through InfoEd\)](#) provides a broad range of funding opportunities from federal, governmental, international, private, and corporate funders. The tool allows you to establish a profile and generate automatic matches based on your individual criteria. Visit the SPIN [How to Guide](#) and access SPIN via the [InfoEd portal](#) for grant management (SPIN is located on the tool bar on the upper left side after you have gone through your Shibboleth login). More information about InfoEd can be found [here](#). For more information contact [Research Administration Information Systems \(RAIS\)](#).

B. Working with Engineering Grants Administration

Any Engineering student or student group considering a submission of a research proposal that requires an official's signature and/or budget, please contact SoE Research Administration at one of the following emails: lisa_emgushov@brown.edu or soeresadmin@brown.edu

Please note that Brown University's Office of Sponsored Projects ([OSP/BMRA](#)) requires five (5) days in advance of the sponsors' due date. This allows routing an internal [COEUS](#) record for departmental approvals and the return of review comments from OSP/BMRA to the Department Managers and Principal Investigators (PI). The submitted proposal must include all required elements specified in the sponsor's application guidelines.

Further guidance can be found at <https://www.brown.edu/research/institutional-facts-reference-documents/proposal-submission-policy-guidelines>

C. Graduate Community

The [Graduate Student Council](#) (GSC) helps to foster a sense of community among graduate students across departments, to facilitate engagement on graduate student-related issues, and serve as a voice for the graduate community. The council coordinates [social events](#) and provides vast information on resources, including an alternate source for conference funding – all in support of the academic and social lives of Brown graduate students.

D. Wellness

We believe that when our students are psychologically healthy, they form and sustain more meaningful relationships, perform better academically, and tend to make the most of their time here at Brown. We are committed to supporting the wellness of our students and have created a space for relaxation within the walls of the Engineering Research Center (ERC). Our Wellness Room is located on the 2nd floor of the ERC, Room 203. Use of this space [must be reserved in advance](#) and can be reserved in 30-minute increments twice daily. This room is for wellness use only, including mental health, for nursing mothers, and for private conversations with health care providers. Please note that priority is given to nursing mothers, both in scheduling priority and unlimited usage. [Check the online schedule](#) for room availability and to make your reservation.

CAPS, the university's [Office of Counseling and Psychological Services](#), is an important resource for students facing a sudden crisis or seeking short-term individual therapy, group therapy, or referral services. CAPS staff work with students through a broad range of emotional, social, identity, and adjustment-related issues. Appointments are confidential and free of charge to all currently registered students.

Dean Maria Suarez serves in the Graduate School as Associate Dean of Student Support and is well versed in the challenges and issues unique to graduate students. Graduate students may schedule a visit with Dean Suarez to discuss:

- Medical and personal leave
- Support opportunities, practice, and policies
- Her role as liaison to the Offices of Campus Life and Student Services, Institutional Diversity, Student and Employee Accessibility Services, as well as to Counseling and Psychological Services (CAPS)

Meeting times with Dean Suarez are available through [online self-scheduling](#) and by appointment.

Friends are often the first to notice that a student might be experiencing high levels of distress. Please access [resources for a friend in distress](#), as needed. We hope you never feel that you are alone or that you need to solve difficult situations by yourself. [Many university services](#) stand ready to assist you in an emergency.

E. Leaves of Absence

The Graduate School has a detailed policy that regulates various forms of [Leaves of Absence](#) as outlined in the current online version of the Graduate School Handbook.

1. Types of Leave

See [Graduate School Handbook](#) for details on each type of leave.

- *Family Leave*: May be granted for family needs.
- *Medical or Psychological Leave*: May be granted for a serious physical or psychological problem encountered by a graduate student.
- *Professional Development Leave*: May be granted for an approved educational or

- professional development opportunity that advances a student's pedagogic goals.
- *Probationary Leave*: May be granted to students for issues with academic performance.
- *Personal Leave*: This leave is an elective leave taken for personal reasons.

All leaves except Probationary and Personal allow students to extend the terms of their guaranteed funding and should not affect their academic progress or standing. Reinstatement after Probationary and Personal Leaves usually requires that the student meet certain conditions that are mutually agreed upon at the time when the leave is formally requested.

2. Procedure to Request a Leave

Students are required to discuss their intention for a Leave of Absence with their Research Advisor and the Engineering Director of Graduate Studies (DGS). Students must complete the appropriate Leave of Absence Request form in [UFunds](#). The Department Chair and the program DGS will approve the leave request through U Funds to indicate awareness and approval of the leave request. In some cases, typically for a Personal or Probationary Leave, there may be specific conditions that the student must meet before reinstatement into the program.

Returning from Leave (Reinstatement) - To return to active status, and to be eligible for funding in the next academic term, students for all leave types, including Medical Leave, must notify the Graduate School or School of Professional Studies in writing by May 1 for a fall-semester return or November 1 for a spring semester return. Readmission for summer term requires additional approval by the program and will be reviewed on a case-by-case basis; such requests must be submitted no later than April 1.

To extend a leave of absence beyond one year, students must file a request for an extension with the Graduate School *prior to the expiration of their leave*. This request must be accompanied by a supporting letter from the Director of Graduate Studies. Students who do not file extension requests will receive a warning from the Graduate School and may be *automatically withdrawn* from their graduate program at Brown.

F. Student Life Resources

[Academic Support](#) (Office of the Dean of the College, University Hall): Provides academic support services that supplement the support provided by course instructors.

[Brown Center for Students of Color](#) (68 Brown Street): The Brown Center for Students of Color is a student-focused center designed to provide students of color with a base for social, academic, administrative, cultural, and organizational support.

[Brown Recreation](#): Information about on-campus fitness facilities, aquatics, and club sports.

[Center for Career Exploration](#) (167 Angell Street): The Career Center works in collaboration with academic departments to connect students with career resources; help students identify their skills, interests and values and to explore a wide range of career options; and to articulate their unique experiences to employers.

[Counseling and Psychological Services \(CAPS\)](#) (The Health and Wellness Center, 450 Brook Street): Provides crisis intervention, short-term individual therapy, group therapy, community outreach, and referral services.

[Graduate Student Professional Development](#) (Horace Mann, 47 George Street): Development opportunities include advanced teaching opportunities, Global Mobility grants and research travel funds, interdisciplinary scholarly opportunities at Centers and Institutes, communications workshops and public research talks, and a series on exploring careers in higher education administration.

[Health Services](#) (The Health and Wellness Center, 450 Brook Street): Your resource for emergency medical services, non-urgent medical care, and confidential sexual assault hotline. [Bwell Health Promotion](#) provides educational resources for nutrition, sexual health, sexual assault and dating violence, physical and emotional health, alcohol and drug use, and more.

[LGBTQ Center](#) (Stonewall House, 22 Benevolent Street): Provides a comprehensive range of education, information and advocacy services and works to create and maintain an open, safe, and inclusive environment for lesbian, gay, bisexual, transgender, queer and questioning students, faculty, and staff, their families and friends, and the campus community at large.

[Office of the Chaplains and Religious Life](#) (Page-Robinson Hall, 69 Brown Street, Room 410): Works to ensure that a diversity of beliefs has voice and vitality throughout the University community. OCRL sponsors programs, coordinates a broad set of chaplains and affiliates that advise a breadth of spiritual traditions, and hosts open office hours to meet with university Chaplains.

[Office of Institutional Equity & Diversity](#) (Horace Mann, 3rd Floor): Provides leadership for the formulation and oversight of policies related to pluralism and equity and initiates programs and practices that promote diversity, inclusion, and fair treatment for all members of the Brown community.

[Office of International Student and Scholar Services](#) (Page-Robinson Hall, 69 Brown Street, 4th Floor, Suite 420): Facilitates the integration of international students and scholars into the Brown community. OISSS provides orientation programs and advising services on immigration and visa matters, work permission, orientation, cultural adjustment and personal concerns.

[Division of Campus Life](#) (20 Benevolent Street): Provides a variety of services, support and outreach to undergraduate, graduate, and medical students designed to promote academic achievement and personal development.

[Office of Military-Affiliated Students](#) (Vartan Gregorian Quad A, 101 Thayer St., Room 106): Brown is committed to building a community that actively supports veterans who are beginning, returning to, or advancing their pursuit of higher education. This office supports the experience of all student veterans, including those who served in the military for countries other than the United States.

[Ombuds Office](#) (Hillel Building, 80 Brown Street, 3rd Floor): The Ombuds Office provides an independent, confidential, neutral and informal resource for faculty, staff, postdoctoral fellows and associates, graduate students and medical students who have concerns arising from or affecting their work and studies at Brown.

[Sarah Doyle Center for Women and Gender](#) (26 Benevolent Street): Seeks to provide a comfortable, yet challenging place for students, faculty, and staff to examine the multitude of issues around gender. The Center offers programs and services for all members of the Brown community and is a site for research into and exploration of gender issues that extend into and beyond the classroom.

[SHARE Advocates \(Sexual Harassment and Assault Resources and Education\)](#) (The Health and Wellness Center, 450 Brook Street): Confidential services include support for a survivor or friends of a survivor, help filing a complaint (if that is the student's choice), and help navigating resources at Brown and the community.

[Sheridan Center for Teaching and Learning](#) (Sciences Library, 201 Thayer Street, 7th floor): Provides practical advice about teaching and professional development; promotes best practices and promising new practices in teaching; supports instructors as they launch and develop their professional careers.

[Student Accessibility Services \(SAS\)](#) (69 Brown Street, Suite 512, 5th floor, Page-Robison Hall): SAS coordinates and facilitates services for students (including graduate students and postdoctoral trainees), faculty, staff and visitors with physical, psychological, and learning disabilities.

[Substance Abuse Support](#) (addiction and recovery): The University dedicates resources to support students in recovery from addiction and substance use disorders, and to assist all students negatively affected by their own or others' substance use. The Dean of the College office and the Division of Campus Life provide overlapping services to students with substance use disorders, to develop campus policies regarding alcohol and other drugs, and to educate all members of the campus community about alcohol and drugs and their effects. For more information about available services, please contact Dean for Recovery and Substance-Free Student Initiatives, [Lindsay Garcia](#) in the Office of the Dean of the College.

G. Attending School Seminars and Talks

A key component to being a successful graduate student is intellectual curiosity. As such, the department strongly encourages the attendance of all graduate students at all thesis defenses. Ongoing Engineering seminars are held throughout the year by visiting scholars and other professionals which we encourage you to attend. Check the [Engineering Events calendar](#) frequently to learn about current school-wide activities.

H. Writing Resources

In graduate school, it is expected that students become proficient in technical writing, including but not limited to class reports and summaries, term projects, technical papers, thesis or dissertation proposals, and theses or dissertations. The [Writing Center](#), Sciences Library, 201 Thayer Street, 5th Floor, is an excellent resource available to all graduate students.

Additional [library resources](#) for research on engineering-related topics.

Other Writing Resources:

Thyer, B. A. 1994. *Successful Publishing in Scholarly Journals*. SAGE Publications.
<https://www.amazon.com/Successful-Publishing-Scholarly-Journals-Survival/dp/0803948379>

Beer, D. and McMurrey, D. 2019. *A Guide to Writing as an Engineer*, 5th edition. Wiley.
<https://www.wiley.com/en-us/A+Guide+to+Writing+as+an+Engineer%2C+5th+Edition-p-9781119285960>

I. Engineering Contacts

STAFF

A School of Engineering Staff Directory may be found at <http://www.brown.edu/academics/engineering/people> or, for a university-wide People Search, <http://directory.brown.edu/search>

FACULTY

Visit the School of Engineering website for a listing of current faculty and areas of expertise: <http://www.brown.edu/academics/engineering/people/faculty>

GRADUATE STUDENTS

A full graduate student directory, including PhD and Master's students, may be found at: <https://www.brown.edu/academics/engineering/graduate-student-directory>