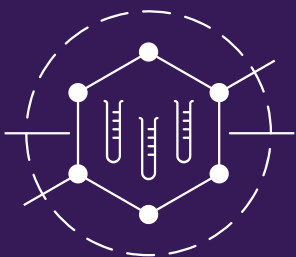


Northwestern | McCORMICK SCHOOL OF
ENGINEERING

**MATERIALS SCIENCE AND
ENGINEERING**

PHD STUDENT
HANDBOOK
2025-2026



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I

NON-DISCRIMINATION STATEMENT



Northwestern University does not discriminate or permit discrimination by any member of its community against any individual on the basis of race, color, religion, national origin, sex, pregnancy, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship status, veteran status, genetic information, reproductive health decision making, or any other classification protected by law in matters of admissions, employment, housing, or services or in the educational programs or activities it operates. Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. Further prohibited by law is discrimination against any employee and/or job applicant who chooses to inquire about, discuss, or disclose their own compensation or the compensation of another employee or applicant.

Northwestern University complies with federal and state laws that prohibit discrimination based on the protected categories listed above, including Title IX of the Education Amendments of 1972. Title IX requires educational institutions, such as Northwestern, to prohibit discrimination based on sex (including sexual harassment) in the University's educational programs and activities, including in matters of employment and admissions. In addition, Northwestern provides reasonable accommodations to qualified applicants, students, and employees with disabilities and to individuals who are pregnant.

Any alleged violations of this policy or questions with respect to non-discrimination or reasonable accommodations should be directed to Northwestern's Office of Equity, 1800 Sherman Avenue, Suite 4-500, Evanston, Illinois 60208, 847-467-6165, equity@northwestern.edu. Questions specific to sex discrimination (including sexual misconduct and sexual harassment) should be directed to Northwestern's Title IX Coordinator in the Office of Equity (same phone and email as above), or TitleIXCoordinator@northwestern.edu. A person may also file a complaint with the Department of Education's Office for Civil Rights regarding an alleged violation of Title IX by visiting this webpage or calling 800-421-3481. Inquiries about the application of Title IX to Northwestern may be referred to Northwestern's Title IX Coordinator, the United States Department of Education's Assistant Secretary for Civil Rights, or both.

The University has designated the Associate Vice President for Civil Rights and Title IX Compliance to coordinate the University's compliance with federal and state civil rights laws regarding protected characteristics, including Title IX and those other laws and regulations references above:

Emily Babb, Associate Vice President for Civil Rights and Title IX Compliance | Title IX Coordinator, Office of Civil Rights and Title IX Compliance, 1800 Sherman Ave., Suite 4500, Evanston, IL 60201, (847) 467-6165, OCR@northwestern.edu.

Tiffany Little, Senior Director. Civil Rights and Title IX Compliance | Deputy Title IX Coordinator, Office of Civil Rights and, Title IX Compliance, 1800 Sherman Ave., Suite 4500, Evanston, IL 60201, (847) 467-6165, OCR@northwestern.edu.

The University complies with all federal and state laws that protect individuals with disabilities from discrimination based on their disability or perceived disability status. As such, reasonable accommodations and auxiliary aids and services are available to individuals with disabilities when such modifications and services are necessary to access the institution's programs and services. The University's ADA/504 Coordinator is:

Laura Conway, Director, ADA Compliance | ADA Coordinator, Office of Civil Rights and Title IX Compliance, 1800 Sherman Ave., Suite 4500, Evanston, IL 60201, (847) 467-6165, Accommodations@northwestern.edu.

Sam Milgrom, Deputy ADA Coordinator, Office of Civil Rights and Title IX Compliance, 1800 Sherman Ave., Suite 4500, Evanston, IL 60201, (847) 467-6165, Accommodations@northwestern.edu.

Inquiries about Title IX or the University's prohibitions against discrimination, harassment, and retaliation can be directed to the Associate Vice President for Civil Rights and Title IX Compliance, the ADA/504 Coordinator (for disability-related questions) or to the U.S. Department of Education Office for Civil Rights at the contact information listed below:

Complaints and inquiries regarding discrimination, harassment, and retaliation involving federal laws may be directed to:

U.S. Department of Education, Office for Civil Rights, John C. Kluczynski Federal Building, 230 S. Dearborn St., 37th Floor, Chicago, IL 60604, (312) 730-1560, OCR.Chicago@ed.gov.

U.S. Equal Employment Opportunity Commission, John C. Kluczynski Federal Building, 230 S. Dearborn St., Suite 1866, Chicago, IL 60604, (312) 872-9777.

Any person who believes that the University as a federal contractor has violated nondiscrimination or equal opportunity obligations may contact the Office of Federal Contract Compliance Programs (OFCCP) at OFCCP, U.S. Department of Labor, 200 Constitution Ave. NW, Washington, D.C. 20210, www.dol.gov, (800) 397-6251.

II

MISSION AND VALUES



MISSION, VISION, AND CORE VALUES

Our Mission is to lead in the discovery, development, and dissemination of material solutions for society's most pressing challenges.

Our Vision is to define the forefront of materials science and engineering by educating and growing an inclusive interdisciplinary community of bold, collaborative innovators who provide society with the advanced materials required to improve and sustain human well-being.

Accomplishing our mission and reaching our vision is deeply rooted in our culture, reflected in our three **Core Values**:

Cultivate Visionary Leaders and Trailblazers by providing robust foundations in fundamental research experiences and interdisciplinary education that empowers students to collaborate, break boundaries, and take bold risks.

Enable Scientific Discovery through investments that strengthen fundamental understanding and expand the frontiers of materials knowledge.

Accelerate Engineering Innovation by building convergent interactions and capacity that eliminate barriers between disciplines and incentivize technology transfer.

III

MESSAGE FROM THE CHAIR

August 1, 2025

DEAR INCOMING GRADUATE STUDENTS,

Welcome to our Department!

This handbook will guide you in your educational and research endeavors in the Materials Science and Engineering Department at Northwestern University. Please read it carefully and refer to it regularly so you are aware of the policies, requirements, and responsibilities herein. As compared to the information provided by The Graduate School, the content of this handbook is more specific to our department. You should also familiarize yourself with the academic policies and procedures of The Graduate School.

We hope your time in the program will be enjoyable, enriching, and rewarding. I look forward to getting to know you and working with you. I am always available to help and support you during your time at Northwestern. Feel free to reach out to me about anything.



Mark Hersam

*Chair and Professor of Materials
Science and Engineering*

IV DEPARTMENT CONTACTS

Department faculty and staff are committed to providing attentive and comprehensive administrative support to the MSE community. For more information about MSE department services, please visit

<https://www.mccormick.northwestern.edu/materials-science/people/staff.html>

Department Chair (DC)	Pr. Mark Hersam (m-hersam@northwestern.edu)
Assoc. Department Chair	Pr. James Rondinelli (jrondinelli@northwestern.edu)
Asst. Department Chair (ADC)	Pr. Kathleen Stair (kstair@northwestern.edu)
Director of Graduate Studies (DGS)	Pr. Ken Shull (k-shull@northwestern.edu)
Asst. Director of Graduate Studies (ADGS)	Pr. Jon Emery (jonathan.emery@northwestern.edu)

Business Administrator (BA)	Marilyn Hall (mhall@northwestern.edu)
Academic and Outreach Manager (AOM)	Willie James (william.james@northwestern.edu)
Graduate Programs Coordinator (GPC)	Murphy Sharp (murphy.sharp@northwestern.edu)
Graduate Programs Assistant (GPA)	Leah Lunstrum (leah.lunstrum@northwestern.edu)
Financial Administrator Senior (FA)	Laura Olson (olsonlaura@northwestern.edu)

PhD Matriculation

A. ACCEPTING THE OFFER

The Admissions Chair informs students of acceptance to the doctoral program in late Winter. In the letter, students are informed of their enrollment decision date, which is usually in mid-May. Students must accept the admission offer through the application portal by this date, or The Graduate School will mark the student as not enrolling. Matriculation to the doctoral program happens officially in late August. First stipend checks are dispersed on the last day of September.

B. EMAIL, NETID, WILDCARD, AND CAMPUS ACCESS

Students are provided with their netIDs and University email addresses in mid-summer. Students should activate their netIDs as soon as possible using NUValidate. Timely activation of the netID is important – it provides students with access to email, *Canvas* (learning management system), human resources, online library, CAESAR (grades and transcripts), and other resources. The Wildcard provides students with access to the Northwestern campuses, in general, including buildings, recreational facilities, and shuttles. Students can acquire their Wildcards when they have matriculated, which is typically in late August. Follow the directions at <https://www.northwestern.edu/wildcard/get-a-card/> to sign up for a time to pick up your Wildcard. As Wildcards are not distributed until matriculation dates, students will not have access to campus prior to the matriculation date unless other arrangements are made.

C. COLLECTIVE BARGAINING AGREEMENT

On March 15th, 2024, the graduate student union (NUGW-UE) voted to ratify their first Collective Bargaining Agreement (CBA) with the university. The full collective bargaining agreement can be found [here](#). This agreement is effective between March 15th 2024 and March 31st 2027, and includes within its bargaining unit students enrolled in degree programs who provide instructional or research services for the university. This includes many students enrolled in the MSE PhD program, but students who are unsure of their inclusion in the bargaining unit should contact their union representatives. Graduate students may also elect to sign a FERPA Release Waiver, giving the Union access to information about their appointment. All graduate students are encouraged to fill out [this form](#) agreeing or declining to provide certain employment related information outlined in the form to NUGW-UE when they are covered by the CBA.

The collective bargaining agreement covers details regarding compensation, benefits, international student support, time off, appointment notifications/details, workload, and grievance processes. We encourage all members of the bargaining unit to familiarize themselves with the details of the collective bargaining agreement, linked above. Questions regarding the details of this agreement can be directed to union representatives.

D. COMPENSATION, TUITION AND, FEES

While the department facilitates payroll (and questions regarding payroll can be addressed to the BA or FA, compensation is determined by the CBA (previous section).

All recipients of Research Assistantships or Fellowships must complete Employment Eligibility (I-9) forms, the Federal W4, and Illinois W4 forms. International students must also complete the Alien Tax Status and other forms required by the Federal government. These forms are now on the web and the Human Resource Department will assist you. The I-9 form must be completed electronically and staff can help students with this during orientation week. Students with external fellowships must provide copies of their original award letter and any renewal/adjustment letters in subsequent years. All checks must be direct-deposit and hard copies are not available. To view check details, please use the FASIS Self Service website. Students are paid at the end of the month. For new students, this means your first check is Sept. 30th.

Information about your tuition is online, accessible through CAESAR. If bills other than tuition arise (e.g., Wildcard replacement fee), they may appear in this account. If you have any questions regarding your tuition bill, see the Payroll Financial Assistant in the MSE Department Office. TGS charges all graduate students optional Activity Fee, which is \$125/quarter. This fee offsets the costs of TGS services such as the U-Pass, legal services, and organization funding. Students are expected to pay this fee in a timely manner via CAESAR. More information is [here](#). In some instances you can waive this fee (e.g., if you are living outside the Chicago area).



E. THE GRADUATE STUDENT TRACKING SYSTEM (GSTS)

Both TGS and the MSE Department use the Graduate Student Tracking System (GSTS) to record and monitor student progress towards the PhD Degree. Students will interact with this system frequently as it tracks student progress and milestones. An outline of the system and tutorials on how to use it are available from the TGS webpage, [here](#).

Essentially, any milestone, change in study plan, accomplishment, or review needs to be recorded in the GSTS. Students should expect to regularly access this system to update their information as they advance through the program.

This profile also contains application materials, approved study programs, grades for completed courses, records of completed examinations, names of committee members, current address, phone numbers, etc. In accordance with federal regulations, a student is allowed access to their file.

Educational records cannot be released to any outside agency without the student's written consent. Students applying for credit cards, etc., which require employment and/or salary verification by the department, must inform the department that such a request may be forthcoming. Verification of employment may also be done through NU's Employment Verification Infoline.

The student, advisor, DGS, ADGS, as well Education and Outreach have access to the student's GSTS profile. In this handbook we highlight instances that require student action in the GSTS profile.

GSTS | **Graduate Student Tracking System** | Student
THE GRADUATE SCHOOL, NORTHWESTERN UNIVERSITY
Developed by the Robert H. McDonald School of Engineering & Applied Science in partnership with GSIT | **Primer**

The Graduate Student Tracking System (GSTS) is designed to help you and your program track and communicate about your academic progress and achievements. In GSTS you can view and update the following information:

Profile

- View your demographic information.
- View your academic milestones, deadlines, & completion status.
- View an overview of your financial aid.

Committee

- Select & invite your advisor.
- Select & invite committee members.
- Note any changes in advisor or committee.

Plan of Study

- Plan your coursework.
- Assign coursework to requirement categories.
- View completed coursework against program requirements.
- Indicate your specialization.

Academic Progress

- Keep track of your academic activities, including research progress, publications, meetings, & more.
- Inform your program, advisor, and committee of progress & academic achievements.

Login with your NetID at gsts.northwestern.edu
For help, email gsts@northwestern.edu
For additional GSTS resources, visit tgs.northwestern.edu/academics/graduate-student-tracking-system.html

F. ARRIVAL ON CAMPUS AND ORIENTATION WEEK

After matriculation is complete, students may access campus and university resources. First-year orientation, however, does not begin until ~ 10 days before classes start. During orientation, students will meet members of their cohort, faculty, staff, and other graduate students. This approximately week-long event includes information sessions, academic resources, trainings, student panels, tours, research talks, and social events. A tentative schedule will be released in early August through the *Canvas* site. **Attendance of Orientation Week is required**, although you may reach out to the ADGS if you need to miss any required sessions.

We will provide you with access to the Orientation Week *Canvas* in early August. This resource provides you with access to the important resources and documents:

Orientation Documents: All orientation documents are hosted on the *Canvas* site

Bridge Resources and eReserves: We provide a academic Bridge Resource, which is an adapted version of the interactive textbook used in our introductory courses. Students can use this textbook as a reference as they prepare for their courses. We also host a directory with supplemental background readings if students are interested.

Faculty Research Presentations: During orientation week, faculty will present on their groups' research and describe open projects for graduate students. Some professors will provide us with PDF versions of their talks, which will be uploaded on *Canvas*.

The *Canvas* site is active for your entire first year. We also use this site to promote tutorials or other events.

For other information regarding student life, move-in, and housing, both the TGS and the Materials Science Student Association are helpful resources.



G. MSE-RELATED INTEREST GROUPS AND ORGANIZATIONS

There are numerous student organizations that may be of interest to MSE graduate students. [This link](#) connects to TGS-affiliated graduate student groups. These student groups present at the Graduate Student Organizations fair in September.

Materials Science Student Association (MSSA)

The mission of MSSA is to build genuine camaraderie in the department by organizing social events, outreach opportunities, and facilitating dynamic and healthy discussions among graduate students and faculty to encourage continued growth as a research community. MSSA's leadership team is composed of second-year graduate students who are responsible for welcoming the incoming cohort to Northwestern's community and helping them acclimate to graduate student life.

MSSA is involved with running New Student Orientation in early September, moderating Town Hall and General Body meetings, hosting department gatherings, organizing intramurals and outreach, and assisting with visit weekends in the spring. MSSA holds elections each year to fill the offices. Students are automatically members and are encouraged to participate. For international students, the club provides valuable interaction for the development of English proficiency. For more information, please visit this webpage or reach out to numssa@gmail.com.

Materials Science Alliance for an Inclusive Community (MatSAIC)

MatSAIC is the student organization focused on fostering belonging within the MSE department. We host discussions and activities that center the challenges and career pathways for students of diverse backgrounds. Please reach out to numatsaic@gmail.com if you have any questions, concerns, or suggestions, or if you would like to get more involved.

Materials Science Umbrella Society (MSUS)

MSUS is a student organization that runs professional development events for PhD and undergraduate students at Northwestern in the field of materials science and related fields.



VI The Advisor Selection Process

One of the most important tasks in your first few weeks in the department will be to meet with potential thesis advisors and decide which one(s) you are interested in working with. It is important to be open-minded and communicate clearly during this process so all parties understand each others' perspectives.

Most of the advisor selection process happens in Fall quarter. The schedule is outlined below. Precise dates for each step in the process will be available on your class's *Canvas* site.

Mid-Sept.: Students attend faculty research talks during New Student Orientation.

Sept.-Nov.: Students meet with faculty members, graduate students, and other researchers to discuss research in their groups of interest.

Late Oct.: All students submit a **non-binding** straw poll indicating their top-choice for advisor. All students and faculty members are provided with anonymized results of the Straw Poll.

Early Nov.: Students submit advisor selection forms listing their top-choice advisor via *Canvas*.

Mid-Nov.: Advisors decide whether to accept the student into their group. Students are informed of their placements. Students not placed enter the second round.

Mid-Nov. until placement: Students not placed in the second round will work with the DGS and ADGS to find placement.

Students arriving for the Fall Quarter have the opportunity to meet all research-active faculty members prior to selecting an advisor. Most faculty who are accepting new members into their research groups will give 10-15 minute presentations on opportunities in their research groups during New Student Orientation. Faculty members who present their work will encourage interested students to contact them for follow-up meetings or invite them to attend group meetings. One-on-one student-faculty meetings are required for placement. Students must document all student-faculty meetings on the Advisor Selection Form and submit the form when they make their final selection. These meetings aid both faculty and students in assessing best fit.

While a student and advisor may verbally agree to placement at any time, no binding agreements can be made prior to when the advisor selection form is submitted in early November.

We expect all students to have all placements completed by Fall. However, if this doesn't work out we will assist students to the best

Department policy is that PhD students are expected to seek an advisor who is an MSE-affiliated faculty member (i.e., core or affiliated faculty members listed on the sit below).

<https://www.mccormick.northwestern.edu/materials-science/people/faculty/>

Students may solicit the DGS for an exception to this policy. The DGS will evaluate the student's appeal and grant the request as appropriate.

Advisor Selection Tasks and Documentation

Advisor Selection Straw Poll In late October, all students are required to list their *current, top choice* for advisor in the *Advisor Selection Straw Poll* on Canvas.

The only person with access to identifiable information in this poll is ADGS Pr. Emery. He will not share this information with any student or faculty member. Pr. Emery will then release anonymized results of the Straw Poll to both students and faculty.

This non-binding straw poll provides students with information identifying advisors and projects may be in demand. It should help stimulate conversation about placement between students and advisors. The poll does not affect placement in any group; its sole purpose is to provide both students and faculty members with a better understanding of the level of project and group interest prior to selection.

Advisor Selection Form: In early November, each student will submit the Advisor Selection Form through *Canvas*. This form informs the DGS of the student's first choice of research advisor and research topic. The DGS then informs the advisors of students who have chosen them, and the advisors make their selections.

Students may be co-advised, in which case there is an agreement between two faculty to share advising roles and funding responsibilities. Typically, one advisor takes a more active role in mentorship.

If no agreement for placement is found in the first round, students enter a second round of selection. This situation is not uncommon — the second round occurs every year. Students that enter the second round of selection work

directly with the DGS to match with an advisor. We endeavor to find placement for students by Winter quarter so they can make research progress in their first year and pass the Preliminary Evaluation. A student must have an advisor to pass this first milestone.

On occasion, faculty members may agree to advise a student prior to the official matriculation date. These "pre-selects" forego the advisor selection process described above. These students may sometimes have the opportunity to begin research before the beginning of the program. Students who arrive prior to the official matriculation date (i.e., to start research in the summer) will confer with the DGS and the DC in this process. However, for documentation purposes, the student must *still* submit the Advisor Selection Form.

We strive to make the advisor selection process fair and equitable, and we endeavor to find satisfactory placement for each student. However, we highlight that students need to be flexible when considering the type of research they'd like to do, and students need to be aware that research projects and funding can be unpredictable and dynamic. The availability of any particular project depends on a multitude of factors that can change over the period of weeks or years. In some instances, a student may seek a change in advisor. The DGS handles such changes on an individual basis.

Adding Advisor in GSTS: After group placement is confirmed, you will need to add your advisor in GSTS so they can provide feedback and track your degree progress. You'll receive directions on how to do this at a later date. You will need to upload proof that you've completed this task on *Canvas*.

Securing a Primary Research Advisor in the First Year

The Department is committed to placing all students and will explore all possible options for placement and will do our best to find acceptable placements. Since satisfactory academic progress cannot be made without a Primary Academic Advisor, all students *must* match with a advisor in the first year.

Expectations are as follows:

- Students are expected to be accepted into a research group by the end of their first quarter (i.e., the end of Fall quarter).
- Unplaced students are expected to actively engage with the DGS, ADGS, and other faculty to find an advisor in the Winter. Failure to find an advisor by the end of the second quarter (Winter) will result in a warning of unsatisfactory progress in GSTS.
- Failure to find an advisor by the end of the third quarter (Spring) will result in a re-evaluate recommendation on the Preliminary Evaluation.

- Failure to find an advisor by the end of the fourth quarter (Summer) will result in a “discontinue” outcome on the preliminary evaluation.

If a student is discontinued at the end of the fourth quarter they have the following options:

- Conversion of degree path to a Thesis-based Master’s degree, to be completed in not less than three quarters. Re-enrollment in the PhD program is possible if the student can find support.
- General leave of absence (up to four quarters) to pursue placement options at the University while on leave.
- Withdrawal from the program.

Program Requirements

There are three groups that have requirements for conferral of the PhD, each with their own requirements and expectations: 1. The Graduate School (TGS) 2. The Department and 3. The Advisor and Thesis Committee. The TGS sets **baseline requirements** and the Department establishes additional technical requirements. The primary research advisor guides the student's progress towards the thesis on an individual level and, together with the committee, evaluates whether the student's scholarly work merits conferral of a PhD.

Below, we highlight important TGS requirements and define our department-specific requirements.

While we provide information and reminders about academic deadlines, **responsibility for meeting deadlines and degree requirements rest with the student**. Academic registration deadlines are also available from the [Northwestern University Academic Calendar](#).

Course Requirements:

Department course offerings are listed [here](#) and many students use the third-party course planning tool <https://www.paper.nu/>. All courses are also listed on [Caesar](#). **You should discuss your course selections with your advisor and receive approval.**

Each quarter all students **must** register for **four** units. In the first year, this typically means 1-3 quality letter grade courses, with the balance (for a total of four units) filled by MAT_SCI 590. So, for example, if you take MAT_SCI 401, 402, and 451 in the Fall quarter in your first year, you must register for **one** unit of MAT_SCI 590. If you instead only took MAT_SCI 401 and 402 (it is rare to only take two courses in the Fall term of your first year) you would need to register for **two** units of MAT_SCI 590. After completing courses, you must still register for four units of TGS 500 every *term* until graduation. It's important that you register correctly for classes or you may lose your full-time student status.

Department course requirements are different for those with only a BS/BA and those with an MS. However, *all* students start with a requirement of **12** quality letter grade courses (i.e., 300- or 400-level courses with letter grades). Reduced course loads due to Master's degrees and alternative schedules due to waivers are discussed below.

The requirements are as follows:

Six Units of MSE Core Courses These are typically completed in the first year. Special permission is required to take core classes outside of the first year.

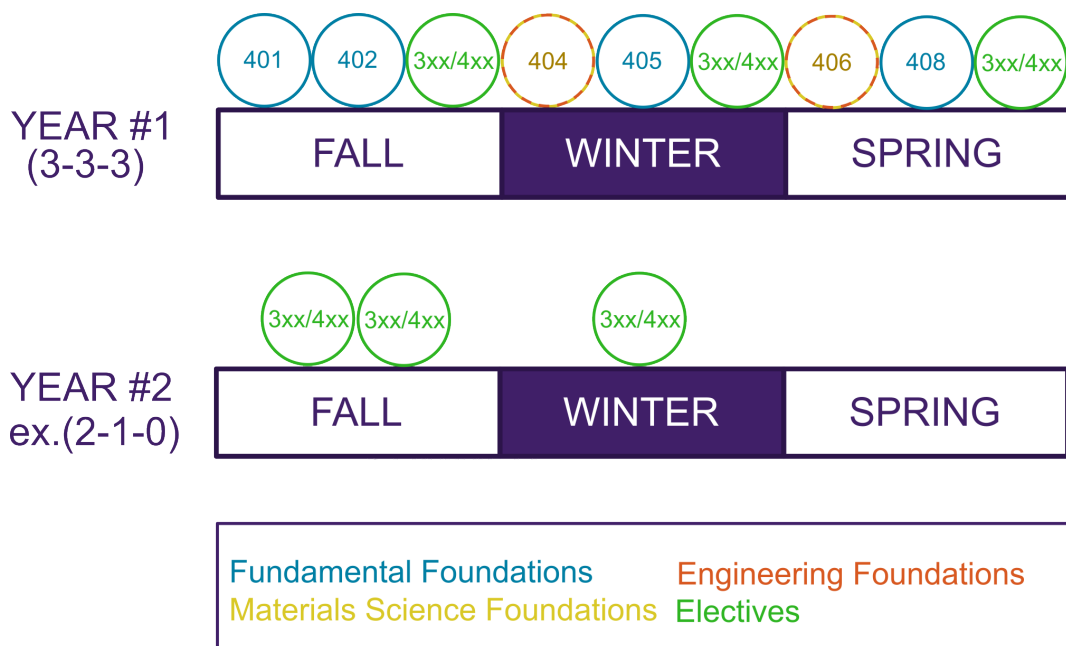
- **Fall:** MAT_SCI 401, MAT_SCI 402
- **Winter:** MAT_SCI 404, MAT_SCI 405
- **Spring:** MAT_SCI 406, MAT_SCI 408

Six Units of Elective Courses These are typically completed in the first and second years:

- Two additional 400-level MSE courses
- One additional 400-level engineering/math/science course.
- Three other engineering/science/math courses either at the 300- or 400-level.
- Students entering with only BS/BA *cannot* apply MAT_SCI 499 to the elective requirements.

Responsible Conduct of Research Training: One course on research conduct is required in the Fall or Winter of the first year:

- GEN_ENG 519



Notes:

- Some 300-level courses are not normally appropriate for PhD students. These include our undergraduate core sequence (MAT_SCI 301, 314, 315, 318, 316-1, 316-2, 331, 332, 351, 351-2, 390-1 and 390-2). However, some of these courses may be appropriate for certain individuals. *If you are interested in one of these courses please contact the ADGS and course instructor for permission to enroll.*
- The six electives must be science/engineering/math courses. One cannot apply music, language, business, etc. courses to these requirements. Please reach out to the ADGS if you have questions.
- For the elective courses to apply to the PhD requirements, the content must be new to the student. It cannot be a repetition of the coursework completed during a student's BA/BS or MS.
- We encourage students to take 500-level skill-building courses like the Sci-Media courses listed [here](#), but those courses do not satisfy any requirements above and would be in excess of the required coursework. *Consult with your advisor if you'd like to take one of these courses.*

Course Requirements for Students with MS Degrees:

Students entering with an MS degree can count a maximum of **five** courses towards the 12-course requirement outlined above. We will refer to this process as credit “transfer”, even though it is not formally a transfer.

To “transfer” a course in this way, students must have received a grade of “B” or better, and the course must have been completed in pursuit of the MS degree. The course must have been assessed on a quality letter grade scale (e.g., not pass/fail).

The ADGS will assist students in identifying Northwestern courses that are “equivalent” (similar content and credit hours) to their MS coursework. After approval from the ADGS these courses will be added to the study plan in GSTS by the GPC.

Since MS students can “transfer” five units of coursework, but TGS *requires* completion of **nine** units of coursework, we allow students with MS degrees to apply a maximum of **two** units of MAT_SCI 499 (Independent Research Project) to their course requirements.

In short, students with MS degrees can take as few as **seven** traditional courses and **two** independent study courses. The ADGS will consult with students about these options during Orientation Week.

Waiving Courses:

Any students may appeal to *waive* a required course (i.e., MAT_SCI 401, 402, 404, 405, 406, or 408) if they have previously taken a similar course and have sufficient documentation proving mastery of the coursework. To receive a waiver, a student must consult with the course instructor and obtain their approval for the waiver. **Core course instructors have complete discretion in approving these waivers.** An instructor may ask for documentation, e.g, text used, course outlines, exam results, problems sets, or they may ask for an oral or written examination.

The instructor must approve the course waiver by email with the ADGS cc'd. The course waiver will then be recorded to the student's GSTS profile.

Importantly, for students without Master's, **waiving a course does not decrease the total number of courses required** — it only excuses the student from the course. The course must be replaced with a 400-level elective.

Grade Requirements:

The Graduate School and the Department each define GPA requirements necessary to maintain good academic standing. GPA is calculated according to [Northwestern's Grading policy](#). The MSE department does not allow courses to be taken on a pass/fail basis.

[According to TGS](#), all students must maintain a GPA above 3.0 to be in good academic standing. If a student's overall GPA drops below this threshold in any quarter, the student is placed on [academic probation](#) by TGS. The student then has two quarters (not including summer) to resume good academic standing. The DGS and ADGS will work with the student and research advisor to support a return to good academic standing.

The Department itself expects students to achieve a minimum GPA of 3.2 in the core courses. This is evaluated in the Preliminary Evaluation at the end of the first year. While a student with a core GPA of less than 3.2 will not necessarily be excluded from continuing in the program, their case will be explicitly reviewed by faculty during the Preliminary Evaluation.

Major Milestones and Annual Evaluations:

Each year, students must demonstrate satisfactory academic progress via either a major milestone or an Annual Academic Progress report. We'll first outline the Annual Academic Progress report and then expand on the major milestones (Preliminary Evaluation, Qualifying Exam, Defense)

Academic progress **must** be recorded in GSTS. Compliance may involve uploading forms and documentation, or it may simply require filling out a self-evaluation within GSTS.

Very importantly, while TGS and the Department establish baseline requirements for milestones, specific expectation and subsequent evaluation of academic progress is the responsibility of the advisor and the Thesis Committee. These are the individuals who guide the students work and have the expertise to evaluate it. As such, the discretion for scientific feasibility (qualifier) and merit (Master's/PhD) is left to the primary research advisor and the Thesis Committee.

Year in Program	Milestone
Year #1	Preliminary Evaluation
Year #2	Annual Academic Progress Report
Year #3	Qualifier Examination
Year #4 until terminal year	Annual Academic Progress Report
Terminal Year	Thesis and Defense

The Preliminary Evaluation — Year #1

Near the end of the 3rd quarter (i.e. Spring term, first year) students undergo a Preliminary Evaluation, which is reviewed by the faculty in the June Faculty Meeting.

The Preliminary Evaluation considers:

- Placement in a research group is required to pass the Preliminary Evaluation.
- Performance in research, as presented in the Preliminary Research Report (see below).
- Advisor evaluation of student progress in the first year.
- Academic performance in the course courses. The academic progress of students receiving less than a 3.2 GPA will be discussed explicitly during the evaluation process.
- The faculty will also consider other factors, including student background, work ethic, and extenuating circumstances.

The **Preliminary Research Report** is a one-page (not including figures, references, or advisor comments) report and prospectus of the research progress to date. It is not a literature review. This report should be submitted through the New Student Orientation site on *Canvas* by the due date in late Spring. The Department will send out reminders during the Winter and early Spring quarters about this requirement. The format of the Research Report is provided in the *Canvas* assignment.

The student must solicit the advisor for a short (1-3 sentence) statement summarizing their progress and making a recommendation for the outcome of the Preliminary Evaluation. We encourage faculty to provide this statement directly to the student in order to stimulate discussion of the student's progress, but faculty may also elect to send their statement directly to the ADGS. If the student is provided with the comments directly, they append the advisor's statement to the preliminary Research Report.

There are three possible outcomes from the Preliminary Evaluation:

Pass: The student may continue with coursework and research.

Re-evaluate: The student will be re-evaluated at a time specified by the faculty and advisor. This is typically at the end of the Summer quarter. At this time, the student will either pass, be discontinued, or can work with the DGS to explore opportunities in other research groups.

Discontinue: The student cannot continue pursuit of the PhD in their current group. The student may: 1. consult with the DGS to find another group to join 2. opt to transfer their degree path to a Master's degree. 3. leave the program.

The Department will inform students of the outcomes of the preliminary examination through TGS. Historically, the vast majority of students pass the Preliminary Evaluation in the first round, but some students may need additional time to demonstrate proficiency in research before proceeding towards qualification.



The Qualifying Examination — Year #3

Admission to the graduate program does not mean that a student is a candidate for the PhD degree. TGS stipulates that students must successfully complete a comprehensive qualifying examination to be granted candidacy. Upon completion, the department will recommend to TGS the student be admitted to candidacy. Upon approval, the student becomes a PhD Candidate.

The Qualifying Examination is the opportunity for the advisor and other domain experts on the Thesis Committee assess both the student's knowledge in their field, their capability to identify unresolved problems or challenges, and propose viable solutions. In addition, it provides an opportunity for formative assessment of a student's writing and oral communication skills.

To maintain good academic standing, students must pass their Qualifying Examination no later than the end of their 12th quarter — typically the Summer quarter of their 3rd year. Failure to complete the qualifier by this time will lead to **probation** and, if not remedied, **dismissal**. **It is important to discuss your plans for qualification with your advisor early in your 3rd year.**

Qualifier Requirements and Format

The Qualifying Examination is comprised of two deliverables: 1. a **written research proposal** and 2. an **oral research proposal presentation**, both presented to the Thesis Committee (discussed below). These deliverables should persuade the Thesis Committee of the scientific merit and feasibility of the proposed research project. Students use these deliverables to educate and persuade the Thesis Committee that the proposed work is novel and that the student's approach is practical and appropriate. In persuasive proposal writing, the writer must demonstrate the merit of their ideas by demonstrating logic and reason in their approach to addressing the questions of interest.

The **written research proposal** should be a complete but concise report of not more than 7500 words of text (not including references or figure captions). This proposal should include:

- The objectives of the research — what is to be accomplished?
- The significance of the research - what impact the accomplished objectives would have, assuming the research progresses as planned?
- The literature background — enough description of prior knowledge for readers to understand what progress is to be made and what makes the proposed work important and useful.
- A logical plan of attack — a description of foreseen difficulties, options, and plans to overcome the difficulties.

- A brief description of the procedure, which could be theoretical, analytical, computational, or experimental.
- A presentation of the work completed (i.e. results) by the student to date that demonstrates progress on the thesis research project.

Students are encouraged to base the structure of their written thesis proposal on past outstanding examples of successful proposals as evaluated by the thesis advisor.

The **oral research proposal presentation** is presented to the Thesis Committee and should highlight the most important parts of the research proposal text. These presentations are typically ~30 minutes long with an additional ~30 for questions, but students should confer with their advisor regarding expectations for this presentation, as these differ advisor-to-advisor.

Committee Make Up and Qualifier Procedure

Students are responsible for assembling their own Thesis Committee. This committee is responsible for evaluating the student's proposed work the student during the Qualifying Examination. Students should reach out directly to potential committee members to ask them to serve. Frequently, the members that serve on the committee for the Qualifying Examination are the same as those that serve on the Thesis Defense.

The committee consists of three or more core faculty members of the MSE Department and at least one faculty member from another department, or a suitable expert in the field of the candidate's thesis from outside the University (external member). All committee members must hold doctoral degrees, and at least three committee members must be listed as members of the graduate faculty of the University. Faculty members with joint appointments in the Department are considered internal members of a committee, as are emeritus faculty from the MSE department. Faculty members with courtesy appointments can be considered as either internal or external members of the committee, provided that the committee has at least two core MSE faculty members.



Students have the responsibility to:

- Personally contact each prospective member of the committee asking if they are willing to serve.
- Find a date and hour for the research talk that is satisfactory for each member of the committee. The student should reserve a conference room for at least 2 hours.
- Provide the written qualifier document to each committee member at least ten business days before the scheduled Qualifying Exam.
- Update GSTS and inform the Department staff appropriately:
 - Ensure committee information is entered and up-to-date under the “Committee” tab in the GSTS profile.
 - Check to see if their TA milestone (see TA requirements, below) is incomplete or complete (click “Show Profile” then “Milestones”). If it is incomplete but they believe it should be marked complete, contact the GPC with this information. Note -- TA requirements *need not* be completed by the date of the qualifier, but students need to register this information with TGS.
 - Complete the PhD Qualifying Exam form and the PhD Prospectus forms. The dates will be the same for both forms.

Please reach out to the GPC if you have any questions regarding the tasks listed above.

Qualifier Outcomes: The committee will evaluate with Qualifying Examination with one of three possible outcomes.

Pass: The student is now recognized by The Graduate School as a candidate for the PhD degree.

Conditional Pass: The Committee has evaluated the student has passed, with conditions. These can include, for example, revisions to the qualifying document or satisfactory English proficiency. These conditions must be satisfied within specified time limits as defined by the Committee. Once these conditions are met the student is recognized by TGS as a PhD Candidate.

Fail: The student cannot continue work directly towards a PhD. A students who fails the Qualifying Examination will consult with their advisor and the DGS to determine the next course of action, which may include a Master’s defense.

The PhD Dissertation and Defense (Final Examination)

Like the other milestones, expectations for the Dissertation and Defense are set by the advisor. However, the student must write a dissertation in accordance with the [TGS requirements](#) and advisor's expectations, as well as defend their thesis during a Final Examination based principally on work presented in the dissertation. This examination involves a mandatory open and publicized oral presentation and discussion during the first hour followed by a closed examination with only the committee during the second hour. A conference room should be reserved for **three hours**.

A faculty committee, composed for the Qualifying Examination, conducts the examination. The same members normally serve on both committees, but this may not be the case for various reasons (change of thesis focus, retirements, etc.).

Students must complete the following steps as part of their defense:

- (1) Contact committee members to set date and time well in advance (a month or more, preferably *much* more – faculty have busy schedules).
- (2) Enter information regarding committee members, date and title of thesis in GSTS at least three weeks before the exam.
- (3) Contact the GPC to reserve a space for the Final Examination.
- (4) Submit the [Proof of Publishing Document](#) to GPC. *Neither the Department or TGS have a minimum required number of publications.* However, the advisor *may* set expectations for number and quality of publications needed to complete the PhD. Students should make sure to discuss these expectations with their advisors.
- (5) Receive the advisor's approval that the dissertation is fully proofread and ready to be presented to the committee for review.
- (6) Present each examining committee member with a copy of the dissertation at least 10 business days before the examination. The student should directly ask each committee member as to whether they prefer soft- or hard-copies of the dissertation. Hard copies can be printed and bound in the Department office.
- (7) Complete the Application for Degree in GSTS.
- (8) Complete the [Request for Final Defense form](#) on GSTS at least 10 business days in advance of the Defense so that a public notice of the presentation can be posted on the board outside the Department office.



- (9) Complete the [Defense Request Google form](#). The deadline for completing the final exam and submitting the dissertation to TGS varies each quarter. This timing affects participation in graduation ceremonies and the conferral of the degree. Consult the [timetable on the Academic Calendar website](#) for exact dates each year.
- (10) After final approval, submit your dissertation via [ProQuest](#) prior to the published due date for your graduation quarter.
- (11) Before final departure, return borrowed items (theses, library books, etc.), properly dispose of all research chemicals, and return keys. Also complete the [Department Checkout Google form](#).
- (12) If the student is interested in continuing the research after the Defense, they should speak with their advisor about funding options.

The Annual Academic Progress Report — Years #2, #4 (and annually until graduation.)

In years when a major milestone (i.e., the milestones above: Preliminary Evaluation, Qualifying Examination, or Thesis Defense) is not completed, students must complete an annual self-evaluation through GSTS, as well as update their GSTS profile with their accomplishments that in that academic year. This Annual Report is due in early Summer Quarter.

Students should fill out the Annual Academic Progress Report through GSTS. This includes:

- A **numerical self-evaluation rating** of the student's academic progress in that academic year. The ratings span from Exceptional (5) to Unsatisfactory (1).
- A **narrative statement on progress** summarizing the student's academic work in the last year. The detail here should align with your advisor expectations, and should be between one paragraph and one page.
- A list of **teaching assistant** activities.

- A one-sentence title summarizing your **research topic**.
- A list of **published books, journal articles, or other publications**.
- A list of **awards and honors** received.
- A list of relevant **professional meetings, presentations, and seminars** the student attended.
- A brief summary statement regarding the student's **goals for academic/research progress in the coming year**.
- Any other **relevant comments** the students would like to be documented.

After the students submit the Annual Report, the advisor will evaluate your progress on the same scale ("Exceptional" to "Unsatisfactory"). If your advisor rates your progress as "Needs Improvement" or "Unsatisfactory", the DGS will initiate communication with both student and advisor.

Request for Master's in Primary PhD:

PhD students have the option of completing a thesis-based MS degree (not course-based) by completing the requirements listed below *prior* to their dissertation defense. However, and importantly, the Master's degree is a *distinct* accreditation from the PhD. If a student wishes to receive a Master's in primary PhD, the work must be a scholarly work *distinct* from that of the PhD dissertation. This means that the Department *does not allow duplication of Master's content in a PhD dissertation*. This aligns with our policy for those coming to Northwestern with a Master's degree; those students *also* cannot duplicate their Master's work in the PhD dissertation. Effectively, the standards for inclusion of MS work within the PhD thesis are the same for MS project work done either at Northwestern or elsewhere. An exception (to be approved by the advisor) may be the inclusion of background and motivations sections from the Master's work. Original research cannot be included in both Master's and PhD theses.

PhD students wishing to receive an MS degree must:

- Consult with their advisor to receive approval regarding their plans to defend a Master's thesis.
- Write a Master's thesis document in accordance with specifications laid out by the primary research advisor. The advisor will communicate their expectations for an acceptable thesis document. This may simply be a published paper (or a draft of a paper) to be submitted to a journal, or it may look more like a traditional Master's thesis.

- Submit the Master's thesis to the student's committee at least 10 business days before the defense.
- Defend the MS thesis before a committee of at least three faculty members, with at least two being Materials Science faculty. This committee can be the same as the Qualifier or Thesis Committee. The MS degree must be approved by the entire committee.
- Work with the GPC to make sure that the necessary forms to complete the MS degree are submitted to TGS.

Note, that the MS defense *may* be coincident with the Qualifying Examination, if approved by the advisor. This may (for example) be organized such that the first part of the student presentation presents on past work done as part of the MS thesis, and the second portion focused on future work proposed for the PhD. The qualifying exam *cannot* be used retroactively as a MS thesis defense.

Teaching Assistant Requirements:

PhD students are required to serve as Teaching Assistants (TAs) during their time in the program. This serves to support the teaching mission of the Department as well as provide students with valuable instructional and mentoring experience. The ADC assigns graduate students to assist in MSE classes or laboratory sessions. Assignments may vary in the number of hours per week and in tasks required (grading, office hours, assisting in lectures, etc.).

The minimum requirement is for students to serve a total of 200 hrs as TAs, and a quarter is approximated to be 10 weeks long. TAs may serve as 5 hr/week graders, 10 hr/week TAs, or 20 hr/week TAs. Most students complete their TA responsibilities with two quarters of 10 hr/week commitments performed sometime after the first year of study. TA duties must be performed within the MSE department to count towards the Department's requirement.

Some TAs may be assigned to serve in a 20 hour per week TA role, a position for which the student receives full financial support (i.e. stipend and tuition). 20 hr/week TA assignments are limited in number. Assignment to this role may first be requested by the student's advisor. The request is granted or denied by the DC in consultation with the BA and ADC. **Because 20 hr/week TA assignments are special, they may or may not serve to satisfy the minimum requirement of the program, at the discretion of the DGS, ADC, and DC.** Students with 20 hr/week TA assignments should consult with the ADC regarding this *prior* to the quarter they would like their assignment to fully satisfy the Department's TA requirement.

Prospective TAs are strongly encouraged to attend the training sessions offered by the Searle Center for Advancing Learning and Teaching. Students who are particularly interested in teaching may consider enrolling in Searle's Teaching Certificate Program or other Searle teaching programs. Students are encouraged to serve more than the required minimum, particularly if considering an instructional career. TA roles beyond the minimum must be approved by the student's advisor.

Each quarter, the ADC releases a list of courses in need of TA support and solicits volunteers. Students submit their preferences to the ADC, who makes assignments based on the preferences and needs of students and instructors. Students will not necessarily assist in courses taught by their advisor. Because the workload necessarily varies between courses, the Department and cognizant faculty will make every effort to clearly establish the responsibilities associated with a given course at the time the assignments are being made. To assist in this effort, TAs are required to consult with the course instructor and complete a TA Responsibility Form (distributed by the ADC) prior to the beginning of the course.

Students should be cognizant of this TA requirement as they approach the completion of their degree. While the Department does their best to accommodate TA requests, it is sometimes difficult to find TA assignments for students who leave this duty until the end of their time in the program. Students should contact Pr. Stair if they are within 4 quarters of graduation and have not yet served as TAs. This will facilitate placement and allow better situations for all.

At the end of the course, TAs receive CTECs (Course and Teacher Evaluation Council) – student evaluation and feedback on their teaching. Students should review these CTECs and save them for future reference.

On rare occasions, the Department may accept alternate TA responsibilities in lieu of traditional service in a class. This has typically involved the development of tutorials or other instructional materials – particularly in the Department's Open Educational Resource efforts. These alternate arrangements must be approved by the DGS and ADC and students must demonstrate (i.e., record) that at least 100 hours (equivalent to a 10-hr TA service) is spent on these alternate projects.

Research Time Commitments:

Students are expected to be fully involved in laboratory research under the supervision of their advisor, with a minimum 20-hour week commitment during coursework (please also refer to the [Collective Bargaining Agreement](#)). After coursework is completed, a minimum of 40 hours per week is expected. It is the responsibility of the advisor to provide continuing feedback to the student regarding their progress regularly during their enrollment in the program. This progress is communicated to the DGS both directly and through GSTS.

VIII SERVICE OPPORTUNITIES

Graduate students engage in department outreach and service roles in various capacities. This includes inclusion in (e.g.) admissions, hiring, curriculum, and community/belonging committees. Student participation is solicited at various times throughout the year. Each committee defines protocols for student involvement. Selection for these roles may proceed through nomination and/or voting procedures managed by committees or centers themselves, or mediated by MSSA.

Listed below are the policies and procedures for involvement in Department service roles.

Admission Committee:

The recruiting of new graduate students is a cooperative endeavor between faculty, students, and staff, overseen by the Chair of the Graduate Admissions Committee. Current graduate students are involved in the recruiting of new students through (1) participation in pre-admissions recruiting of under-represented applicants (e.g. our GEM Fellowship Applicant info session), (2) making welcome phone-calls to just-admitted students, and (3) working with staff and the Admissions Chair to host the virtual and in-person visits.

The Admissions Committee also invites one or two graduate student representatives to join the first committee meeting. At this meeting, the committee reviews the admissions rubric, updates it if necessary, and discusses the application of the rubric to ensure an equitable process. The student representatives provide feedback and suggestions during the meeting, and are also asked to review the application instructions on-line to ensure that the language we use is welcoming and inclusive. Finally, the student representatives report back to the general student body when called upon.

Hiring Committee:

The Department hires faculty through two modalities: *open* searches that are advertised broadly and *opportunity* searches that are not disclosed to the MSE community. For open searches, we invite a select number of post-qualifying exam graduate students nominated by their research advisor (with approval of the time commitment and a record of demonstrated maturity and leadership) to participate in a range of activities as part of the department hiring committee which may include, but are not limited to, the following:

- Serving as non-voting members of the hiring committee
- Reviewing and providing feedback on the faculty position description
- Assisting in establishing an equitable timetable for the search process
- Assisting in the recruitment of a diverse pool of candidates
- Developing evaluation criteria and rubrics for evaluating candidates
- Assisting in the standardization of the *Zoom* interview process
- Observing *Zoom* interviews
- Providing rubric-based feedback on *Zoom*-interview candidates
- Reviewing finalists' cover letters and CVs (appropriately redacted)
- Reviewing the summary statement of the search outcome for distribution to the MSE community.

These select students also have opportunities to meet with candidates over lunch (without MSE faculty present) and provide written feedback based on their interactions and voluntary question and answer sessions. All graduate students can attend open seminar talks given by visiting faculty candidates and provide written feedback to the search committee chair.

Graduate Curriculum Committee:

The Graduate Curriculum Committee (GCC) is comprised of the DGS, ADGS, and the graduate core instructors. There are also three student representatives with voting privileges who are selected by their peers in a ranked voting procedure. Candidates can self-nominate or be nominated by their peers. All candidates supply a statement outlining their goals and qualifications that can be viewed by voters. The ADGS administers the election by online poll. Student members responsibilities include 1. contributing ideas to future directions for curriculum development, 2. voting on proposed curricular changes and 3. reporting to constituencies.

Committee for Community and Belonging:

The Committee for Community and Belonging (CCB) is comprised of a faculty chair (or co-chair), additional faculty representatives (1-3), a staff representative, a researchers' representative (post-doc or research faculty/staff), and four student representatives (1 undergraduate, 1 master's student, and 2 PhD students). The mission of the CCB is to work to: 1. Broaden participation in the department at all levels; 2. Foster a culture that celebrates and supports all members of the department; 3. Support effective pedagogy and mentoring practices; 4. Improve transparency in department decision-making processes.

Student representatives can, but do not necessarily, turn over each year. When a member steps down, the chair solicits self-nominations and holds a vote.

Student members responsibilities include: 1. Contributing ideas to future directions for the CCB; 2. Voting on proposed CCB actions; 3. Reporting to constituencies.



IX FELLOWSHIPS AND AWARDS

All doctoral students within their first five years of study have the opportunity to apply for fellowships to support research and dissertation writing during their academic career at Northwestern. MSE students have varied opportunities for awards. In addition to internal departmental, McCormick, and TGS fellowship opportunities, the Department strongly encourages MSE graduate students to apply for external fellowships and grants.

Internal Fellowships and Awards:

Internal fellowships are those awarded by the University, TGS, McCormick, or the Department. Below is a list of selected current internal fellowships we anticipate will be awarded during the academic year.

Weertman Fellowship: This is a Department Fellowship endowed by Julia and Hans Weertman to recognize a student of outstanding scholarship achievements and research promise. This award comes with tuition and stipend funding as well as travel and supplies funds.

Ryan Fellowship: The Ryan Fellowship, made possible by a generous donation from Patrick G. and Shirley W. Ryan, supports graduate students dedicated to the exploration of fundamental nanoscale science and to advancing this knowledge into practical applications of benefit to society. The Ryan Fellowship includes a maximum two-year \$12,500 award/year: \$10,000/year as an additional stipend (divided evenly across 12 months each year) and a \$2,500/year research award. Current PhD students will receive Ryan Fellowship funding in addition to their current funding for up to two years. Students are eligible for Ryan Fellowship funding through their fifth year of enrollment in the PhD program or until they graduate, whichever comes first.

Dr. John N. Nicholson Fellowship The Dr. John N. Nicholson Fellowship provides financial support for outstanding Northwestern graduate students enrolled in PhD programs in the sciences, engineering and management. The Dr. John N. Nicholson Fellowship provides full tuition payment and a stipend for 9 months at the same rate as a University Fellowship. Awards are for one academic year only, but awardees may reapply.

Terminal Year Fellowship The Terminal Year Fellowship supports high achieving students in their final year who face funding constraints. This fellowship provides up to 2 quarters of funding (tuition and stipend).

Presidential Fellowship Presidential Fellows are students who promise to combine outstanding intellectual or creative ability with the capacity to play an important leadership role not only in the Society of Fellows, but also in their respective disciplines and beyond. All Presidential Fellows participate in the Society of Fellows functions, including dinners at which Fellows present their work, an annual retreat, special events, and various other activities. Monthly stipend and tuition (at the advanced rate) starting in fall quarter of the award period for 24 months. A \$1,000 research award in each year of the fellowship period that may be used within each award year on research-related expenses. Up to \$1,000 each year in research/conference-related travel funds, available by request in each year of the fellowship.

Graduate and Postdoctoral Success Bridge Fellowship GPS Bridge Fellowship supports 6th year PhD students' academic progress toward degree completion and empowers students to focus on their own research during financially vulnerable periods. The GPS Bridge Fellowship offers 1 or 2 quarters of funding (tuition and stipend) to be used during the 2025-26 academic year.

Other internal fellowships and grants can be found [here](#).

External Fellowships:

The Department strongly encourages students to apply for external fellowships and grants. Students who are offered both a University Fellowship and an external award are expected to accept the outside support and should consult TGS before a decision is made. Please review the [TGS External Award Policy](#) for more information.

To help graduate fellowship seekers and applicants, the Office of Fellowships maintains an external database that provides a host of options to graduate students. Use the TGS's [Fellowship Finder](#) to filter and locate these opportunities.

Additional Fellowship Resources:

To help guide students through the fellowship process, TGS, MSSA and other university stakeholders have compiled the following resources:

- [MSSA Fellowship Help Packet](#)
- [TGS Fellowship Lists](#)
- [Chicago-based Fellowships](#)
- [Global and Research Opportunities at Northwestern University](#)

POLICIES AND RESOURCES

The Department has general policies in addition to [University](#) and [TGS policies](#), including the [TGS Student Code of Conduct Handbook](#). We won't reproduce those policies here, so students should use those resources or reach out to the contacts listed on those pages if they have questions or uncertainties. Below, we highlight some of these important policies and establish additional Department policies.

Work Publications and Outside Compensation:

Students are funded to work on the research project from which the stipend, supplement, and/or tuition are paid. Since all support monies are derived from government or industry contracts and grants, it is the students' responsibility to satisfactorily perform their assigned research tasks. Most contracts require formal progress reports on the research performed.

Students are not to hold additional part-time jobs or perform contract work, except where there are exceptional extenuating circumstances and the student has secured the consent of the faculty advisor, DC, and DGS.

Students must promptly inform the BA and FA regarding any awards or grants. The support from the research grant or contract cannot be less than the minimum specified for Graduate Research Assistant Tuition Scholarships. Other award money should be used to support the student's educational expenses; e.g., conference travel, books, computer purchases, etc. Accounting assistance is available from the department office if spending must be documented.

Student Support and Conflict Resolution:

The Department understands that students may need support in case of personal struggles or interpersonal conflict. There are numerous routes of mediation and conflict resolution. Often, the first step will be to talk to someone within the department, however, the NUGW-UE also has an established grievance procedure which may be appropriate in certain situations.

Designated faculty and staff that can help or provide referrals for Department-specific issues (e.g., academic struggles, issues with research progress, student-advisor disagreements) are listed below, and include both tenure and non-tenure eligible faculty as well as staff:

- Mark Hersam, Department Chair (Tenure-line)
- Kathleen Stair, Assistant Department Chair (Instructional Faculty)
- Ken Shull, Director of Graduate Studies (Tenure-line)
- Jonathan Emery, Assistant Director of Graduate Studies (Instructional Faculty)
- Marilyn Hall, Business Administrator (Staff)
- Willie James, Education and Outreach Program Coordinator (Staff)

Kathleen Stair and Jonathan Emery also serve as confidential, non-research points of contact. Students may also choose to engage with a number of other resources, depending on the nature of the issue. These include:

- TGS
- CAPS (Counseling and Psychological Services)
- CARE (Center for Awareness, Response, and Education)
- AccessibleNU
- International Office
- Ombuds Office
- Dean of Students Office
- Office of Civil Rights and Title IX Compliance
- NUGW-UE

In addition, students who are struggling with mental health issues or are in crises may approach one of the Department's Mental Health Allies, listed below. These individuals are not trained to counsel students, but are educated as concerned listeners who can support and guide students towards appropriate support services.

- Lincoln Lauhon (Tenure-line)
- Derk Joester (Tenure-line)
- Steve Carr (Emeritus)
- Kathleen Stair (Instructional Faculty)
- Jonathan Emery (Instructional Faculty)
- Marilyn Hall, Business Administrator (Staff)
- Murphy Sharp, Program Assistant (Staff)
- Allison Macknick, Program Assistant (Staff)

Change in Address:

The Department Office must be notified of any change of address. Students must change address through the myHR website and in CAESAR. Be sure to change your address in both as the two systems are separate.

The US Citizenship and Immigration Services (USCIS) requires every international student and scholar to report a change of address within 10 days of a move. It is critical for F-1 and J-1 students to update their address in CAESAR immediately upon their relocation. For J-1 and H-1 scholars they will need to inform the international office as soon as possible. All F-1 students, J-1 students and scholars, and H-1B scholars will also need to complete a change of address form (AR-11) available on the USCIS website. Failure to do so will be a violation of their F1 or J1 status and could result in severe consequences for them and their dependent(s).

International Students:

TGS and the Office of International Student Scholars provide a myriad of resources and support for international students (see [here](#) and [here](#), respectively). International student issues can be addressed directly to the GPC, who can refer you to additional resources. The department also maintains an international student list-serv (MSE_INTERNATIONALListserv.it.northwestern.edu) for international student-specific communications. To be added to this listserv, please contact the DGS.

Safety:

Although the University personnel strive to maintain a safe working environment, students must continually be vigilant regarding safe laboratory practice and equipment. No amount of information and training can replace common sense on the part of the experimenter. If you are uncertain about the safety of a procedure, contact your faculty advisor, the ADC Kathleen Stair, or the Office of Research Safety, (1-5581).

The Department has taken a number of steps to help provide a safe environment for your research. During orientation, students are provided with a copy of the [Cook Hall Emergency Evacuation Plan](#), which describes the building's alarm system and evacuation procedures. Students must read this material carefully and retain it for future reference. Safety glasses and appropriate clothing must be worn at all times when carrying out experiments in the laboratory or the shop.

Safety glasses are available through the Laboratory Stockroom KG48 or your laboratory. Safety glasses and lab coats are available, free of charge, through the Office of Research Safety. Handbooks of dangerous materials and lists of biohazardous/carcinogenic chemicals are available from Research Safety in Tech NG71, and from your advisor.

Keys and Office Space:

Graduate students will receive keys/Wildcard access for Cook Hall as well as their laboratories and offices. In order to get your keys, you should email the department office (matsci@northwestern.edu) for a Key Request form, specifying the rooms you need to access. Please copy your advisor so they can provide approval for your access request via email.

Students may be issued keys to laboratories (from MSE office) and MRC central facilities (from the MRC Office in the Jacobs Center, room 5246) upon approval of the faculty member responsible for that laboratory. Keys must not be passed on to anyone else and should be returned to the MSE Department Office.

Students are not to enter the office of a faculty member at any time when the faculty member is not present, and students may not be in the Department Office outside normal working hours, generally 8:30 AM to 5:00 PM, Monday-Friday. A desk for personal use will be assigned to each graduate student once the permanent advisor has been assigned. The assignment of both desk and research space are handled by your advisor — please see them concerning any move you wish to make. No changes should be made without your advisor's authorization.

The Department office tracks usage of research space within the department, so students are required to inform the Department Office of any changes in office assignment.

Computer and Design Laboratories:

Computers are available for individual use in the Undergraduate Teaching Lab in Cook 2022 and the Bodeen-Lindberg Materials Design Studio in Tech C115. These computer resources are not meant to substitute for equipment provided by the research advisor. Access can be limited; classes and MSE undergraduates are given first and second priority use of the machines. Both rooms are unavailable during lab or class periods.

Access to the Bodeen room (Tech C115) is by code on a numeric pad. This code will allow access at all hours. Please do not share the access code with non-MSE individuals. Access to the Teaching Laboratory (for office hours, etc.) is granted by request by contacting matsci@northwestern.edu. Other individuals who require access may submit their request Professor Kathleen Stair in Cook 2022. If there are problems with the computer resources, please reach out to Pr. Stair.

Software:

The University provides a myriad of free (and paid) software for students, including research, word processing, graphical editing, operating systems, and security/backup software. Please visit [this webpage](#) to find these resources. You may also be provided access to software for your courses (COMSOL, ThermoCalc, Matlab, Mathematica, Ansys/ANSYS Granta Edupack). You must comply with the license policies of the software you use! Often, software must be uninstalled by the end of a course. Contact your instructor if you have questions about this.

Further, the department provides research licenses for *Overleaf*, *Origin*, and *COMSOL* with some restrictions for those interested. Students should contact Laura Olson for this license information and approval.

Pirated software is illegal, and the University policy is that no member of the Northwestern community may engage in activity that violates federal, state, or local laws. See [here](#) for more.

Purchasing, Facilities, Supplies, and Other Services:

The Department supports research group purchasing of items and supplies, please contact MSEpurchasing@northwestern.edu. To make any purchase, students must obtain a chartstring/funding source their faculty advisor and provide it to the Accounting Specialist at the time of ordering. Purchases requests are processed through the [Purchasing Intake Form](#).

Dozens of core research facilities serve to support the University's research mission. A list of these facilities is available [here](#). Most facilities have usage fees. Students must have the permission of their advisors before charging any time on equipment or obtaining supplies from any storerooms. Booking time at the shared research facilities is usually done through the NUCore website. To get started and create an account, email nucore@northwestern.edu with the chartstring provided by your advisor.

Laboratories and offices possess telephones that can be used for University business. Personal calls should be made on cell phones. Each laboratory is provided with a telephone for calls connected with University business. Collect calls are not acceptable by Northwestern regulations.

Mail is delivered once a day to the Department Office, usually around lunchtime. The student mailboxes are in the main office hallway. Use of the University mailing address for personal mail is not allowed by University rules. The US Mail basket in the office is for university business only. We suggest that students direct journals and other mail to their home address if possible, as routing these through University mail and the department office can delay receipt.

Printing and copying machines for research-related copying are available in the Department Office, and in the south corridor of the third floor of Cook Hall. Printing instructions can be found [here](#). Printer registration requests should be sent to matsci@northwestern.edu. A user code, which can be obtained from the department, is required.

Personal copying should be kept to a minimum on the department machines and research groups are responsible for ordering paper for lab and office printers through the department Accounting Specialist. Copy cards for use in copying machines at the library are available through the Wildcard Office or at Seeley Mudd Library. Photocopying services are also located at Norris Center and 2020 Ridge for large orders. A fax machine is located in the Department Office.

Travel Reimbursement:

Students on supported travel (e.g., conferences, research trips, etc.) are eligible for reimbursement for some expenses incurred during travel. Please review the reimbursement procedure [here](#) and contact MSereimbursements@northwestern.edu for reimbursement assistance.

It is recommended that you check in with MSE staff prior to travel to ensure that your expenses are allowable and that you obtain all necessary documentation. Please also obtain approval from your PI prior to travel or purchases that you wish to have reimbursed. Full reimbursement instructions and frequently used forms can be found on the department website.

The Department can also support pre-pay registration fees, flights, and hotels so that students do not need to provide personal funds up-front. Please contact matsci@northwestern.edu for help with this. More details about Northwestern-affiliated travel agencies, *per diem* allowances, and other relevant University policies can be found on Northwestern's Travel website.

Bikes, Skateboards, and Scooters:

For safety reasons, bike riding, skateboarding, and scooting are prohibited in the corridors of Tech and Cook. In addition, bikes may not be stored in labs or in public spaces in the building.

Bicycle registration is strongly recommended for everyone who bikes on campus. Along with a good lock and proper locking technique, it is also the easiest way to keep your bicycle safe. Current Northwestern students, faculty, or staff who register their bike are eligible to receive a free helmet and light. More information can be found [here](#).

