



Molecular Engineering & Sciences Institute

2022 - 2023
Graduate Student
Handbook

Table of Contents

Program Overview	4
New Student Checklist.....	5
Buildings.....	7
Department Related.....	7
Academic Program.....	8
Degree Timeline	8
Core Requirements.....	9
Minimum Graduate School Requirements	9
MoE Core Program.....	10
MoE Elective Program	12
Program Credit Requirements.....	13
MoE PhD Data Science Option	13
Written and Oral Exams.....	15
Selecting a Dissertation Advisor/Principal Investigator and Research group	15
Formation of a Supervisory Committee	15
Preliminary Exam.....	17
General Exam & Admission to Candidacy for Doctoral Degree	20
Dissertation & Final Exams	22
Graduating/graduation related dates and requirements.....	23
Applying for graduation.....	24
Publishing your Doctoral Dissertation.....	24
Policies and Procedures.....	24
Substitutions, Waivers & Petitions.....	24
Grading.....	25
Numerical grading scale.....	25
Non-traditional Grading Options	27
Grade Reports.....	27
Academic Performance/Scholarship.....	27
Grievances/Difficulties.....	27
Grade changes and appeals.....	28
Repeating a course	28
Withdrawals.....	28
Dropping courses.....	28
Withdrawal for the quarter.....	299
Readmission after loss of graduate status	29
Vacation Guidelines/On-Leave status	29
Returning from On-Leave status.....	30
Tuition and Funding.....	30
Tuition, Funding & Taxes.....	30
Additional Outside Funding Opportunities	31
Funding Considerations.....	32
Becoming a Washington State resident	32
Campus Resources and Directory	34

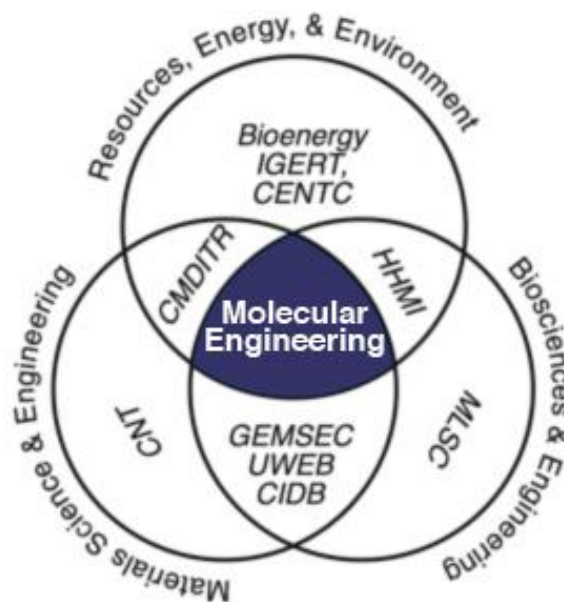
Campus Resources.....	34
Who to See for Help	Error! Bookmark not defined.
Department Information	35
Mail, Phones, Fax & Photocopies.....	35
Phones/Fax	35
Printing Posters	36
Keys & Security	36
Lab Safety & Emergency Response	36
Supplies & Equipment	36
Department vs. Personal Expenses.....	36
On-Campus Purchasing	36
Payroll Information	37
Getting your paycheck	37
Online Direct Deposit	37
Where is a good place to open a bank account?.....	37
Change of address (while enrolled at the UW).....	37
Health Care.....	38
Commuting to Campus / Bike Info	38
Molecular Analysis Facility	38
Student organizations.....	39

Program Overview

The Molecular Engineering and Sciences Institute will bring together faculty teams from across the University of Washington campus to catalyze translational research in the CleanTech and BioTech areas. The Institute will serve both as an intellectual accelerator to bring fresh approaches and ideas to societal grand challenges in sustainable energy and materials, and in medical therapeutics and diagnostics, and as a physical incubator where new interdisciplinary teams can come together in a shared space.

The Institute is located in the Molecular Engineering and Sciences Building, a facility specially designed to promote collaborative molecular-scale research. The building houses a world-class Molecular Analysis Facility where state-of-the-art instrumentation is developed and utilized by the broad research community at UW, as well as by the larger non-profit and high-tech Seattle community.

The Molecular Engineering and Sciences Institute will also coordinate interdisciplinary education programs for undergraduate and graduate students in the College of Arts and Sciences and the College of Engineering. Drawing on the expertise of multiple departments, these programs will teach students the fundamental aspects of molecular-level engineering through core courses and top-notch research opportunities.



New Student Checklist

- **Husky Card/U-PASS (student ID & bus pass):** Students who are eligible to register or who have registered may obtain their UW ID card, called the Husky Card. You can obtain your student ID card as soon as you arrive on campus. The Husky Card Account & ID Center is located on the ground floor of the Odegaard Undergraduate Library, next to the By George café. Walk-in hours (no appointment needed), Monday-Friday 9am-noon and 1-4pm. More information is available via their website: [Husky Card Services](#)

You will need to have your student ID number and state- or federally-issued photo identification with you (such as a driver's license or passport).

The U-Pass is a bus pass valid on all regular Metro and Community Transit routes as well as Sounder train service and light rail at all times and through all zones. Your new Husky ID card will contain an RFID chip to use when boarding buses or trains. For Autumn 2021, the U-Pass will begin working Sep 22, 2021.

- **International Student Services (ISS):** All international students must comply with ISS policies and procedures. ISS is located in Schmitz Hall. The Office of International Students and Scholars (ISS) offers an online check-in procedure for new international students. International students may complete an online check-in at any time, even before you arrive in the U.S. This will allow an early removal of the ISS registration hold. The registration hold will be removed 3-5 business days after completing the online check-in. Here is the link to the online information and other information that will be helpful: <http://iss.washington.edu/> . If you have questions regarding the ISS registration hold, please review the web site. After arrival, if you travel outside of the U.S., you must first go to the International Services Office.
- **International Students – Tax ID Number or Social Security Number:** International students who have and RA or TA appointment need to obtain either a tax identification number, or if eligible, a social security number. If you are not eligible for a social security number, you may get an ITIN (Individual Tax Identification Number). The UW is able to process applications for ITINs but only if you are unable to obtain a social security number. For more information please refer to their website. If you are seeking a social security number, you will need a letter from ISO and the completed form SS-5; take these with you to a Social Security Administration office with your passport and original Immigration and Naturalization Service (INS) documents. You can refer to the nearest office locator via their website. Rules regarding taxes are complex. Please consult the section on taxes for international students via the UW Student Fiscal Services website.

The Office of International Students and Scholars provides immigration and cross-cultural advising to students and scholars from abroad, supports academic departments that sponsor overseas visitors for teaching or research, and serves as

liaison to government agencies involved in international education. Through these activities we bring the world to our campus, applying a global dimension to all aspects of University endeavors.

- **Register for classes:** After the quarter begins, there is a late fee. You need to enroll in at least 10 credits to be full time each autumn, winter, and spring quarter, and 2 credits in summer quarter. Full time status is required for all RA/TA appointments and international students. If you are unsure of your schedule, please contact the advising office. This will officially register you with the UW. (You may Add/Drop/Change courses without penalty through the 5th day of the quarter.)
- **Attend scheduled orientation activities.**
- **Meet with faculty (to discuss expectations).**
- **Asbestos Training:** The UW now requires all staff and students to complete asbestos training each year. This can be done online in a few minutes at:
<https://www.ehs.washington.edu/training/asbestos-general-awareness-online>
- **Required Title IX Online Course: Husky Prevention & Response**

Every member of the UW community has a role to play in creating and maintaining a university free from violence, harassment, and discrimination. [Husky Prevention & Response](#) is a one-time online course on preventing and responding to sex- and gender-based violence and harassment.

Complete the required [course](#) — which takes 60-90 minutes — before the start of your first quarter. If you do not complete the course, you may be unable to register for future quarters.

Student course access: <https://tixstudent.uw.edu/>

A note as you are a student who will also be an employee: student employees are required to complete both the student and employee HPR courses. The employee and student courses have unique information that is relevant to those specific roles. The employee course contains an abbreviated track for student employees.

- **Lab Safety / Environmental Health and Safety Training:** The UW holds a training session for incoming students that covers general safety issues (Laboratory Fire Safety, Chemical Safety in the Laboratory, and Chemical Waste Disposal). The UW also requires that each lab train its users in all safety procedures relevant to that lab. The lab supervisor is responsible for making sure this happens

Buildings

Locate the following campus buildings and familiarize yourself with these important destinations:

- Schmitz Hall (Registration / Tuition / ISS)
- Communications Bldg (Graduate School Main Offices)
- Molecular Engineering and Sciences Building
- Engineering Library / Chem Library / Physics Library
- Suzzallo Computing Resource Center
- University Bookstore (On the “Ave” and in the Student Union Building)
- Intramural Athletic Center (IMA)
- Husky Union Building (HUB)

Department Related

- Contact CCore@uw.edu regarding budgets, appointments, RA/TA payroll, and student insurance.
- Contact John Young (616-6627, johnny@uw.edu) for building mailboxes, permits, and keys.
- Contact Doug Ballard (221-6542, dougb83@uw.edu) with questions about course planning, degree requirements, and other advising related matters.
- Contact Al Nelson (543-2083, alshakim@uw.edu) with programmatic matters that are not covered by Doug. You are encouraged to start with Doug and can be directed to Al.
- All relevant forms and documents will also be posted on our website: <https://www.moles.washington.edu/phd-program/current-students/forms-resources/>

Academic Program

Degree Timeline

- 1) ***Year 1, Autumn Quarter**
 - a) Participate fully in the research group selection and orientation process via establishment of a research rotation
 - b) Course work/attend Molecular Engineering Seminar
 - c) Enrollment in 600 level research credits (see footnote)
- 2) **Year 1, Winter Quarter**
 - a) Participate fully in the research group selection and orientation process by continued research rotation/s and securing long term advisor
 - b) Course work/attend Molecular Engineering Seminar
 - c) Enrollment in 600 level research credits (see footnote)
- 3) **Year 1, Spring Quarter**
 - a) If a permanent research group slot and corresponding funding was not secured during Winter Quarter, secure a spot and funding by end of quarter
 - i) Chosen advisor must have UW budget based funding to begin 4th quarter (Summer)
 - b) Form tentative Ph.D. supervisory committee
 - c) Oral presentation of initial research goals to supervisory committee
 - d) Course work/attend Molecular Engineering Seminar
 - e) Enrollment in 600 level research credits (see footnote)
- 4) **Year 2, Autumn Quarter**
 - a) Preliminary Exam (requires written and oral reports to supervisory committee)
 - i) Critique of paper
 - ii) Research progress and plans
 - b) Course work/attend Molecular Engineering Seminar
 - c) Enrollment in 600/800 level research course (credits are variable based on advisor recommendation)
- 5) **Year 2, Winter Quarter**
 - a) Course work/attend Molecular Engineering Seminar
 - b) Enrollment in 600/800 level research course (credits are variable based on advisor recommendation)
- 6) **Year 2, Spring Quarter**
 - a) Course work/attend Molecular Engineering Seminar
 - b) Enrollment in 600/800 level research course (credits are variable based on advisor recommendation)
- 7) **Each subsequent Autumn, Winter, and Spring Quarter**
 - a) Course work/attend Molecular Engineering Seminar
 - b) Enrollment in 600/800 level research course (credits are variable based on advisor recommendation)
- 8) **Prior to beginning of year 4 (by end of third summer quarter)**
 - a) Second Milestone: Non-thesis Master of Science (M.S.)
 - b) Pass General Exam
- 9) **Approximately by end of year 5**
 - a) Pass Final Exam

*Adjust your chosen research credits so you are registering for 10 to 18 total credits (including both coursework and research credits). If you fail to meet one of the above milestones on time, you are subject to being placed on probation or dismissal from the program either via internal procedures, or via the Graduate School policy detailed in [Memo 16](#) . The GPA will consult with your Ph.D. committee to determine whether probationary status or dismissal is appropriate. Once you are on probation for a specified deficiency, you must return to normal status within one quarter. Otherwise, any program financial support commitment terminates.

While it is not feasible to set the exact time to degree, but it is expected that most students will finish in five years.

Core Requirements

- Graduate courses are intended for, and ordinarily restricted to either students enrolled in the Graduate School or graduate non-matriculated students and are given numbers from 500 through 800. Some courses at the 300 and 400 levels are open both to graduates and to upper-division undergraduates. Such courses, when acceptable to the supervisory committee and the Graduate School, may be part of the graduate program. Courses at the 300 level are not included in the calculation of grade-point average (GPA) and will not apply toward the minimum Graduate School requirement of 18 graded credits for the master's or doctoral degree.
- Approved 400-level courses are accepted as part of the major as well as minor or supporting fields.
 - Undergraduate research (499) is not accepted as part of the graduate program. Graduate School Memorandum No. 36 offers additional information on graduate courses.
- If a course is offered at both the 400 and 500 level, MoIE students are expected to take the 500 level version.
- With the exception of summer, students are limited to a maximum of 10 credits per quarter of any combination of courses numbered 600, 700, or 800.
- Graduate students may repeat any course. Both the first and second grades will be included in the cumulative GPA. Subsequent grades will not be included, but will appear on the permanent record. The number of credits earned in the course will apply toward degree requirements only once.

Minimum Graduate School Requirements

You must satisfy the Graduate School minimum requirements, summarized below.

*NOTE: Graduate School policy requires you to satisfy the requirements in force **at the time of graduation** (not when you entered the degree program). Check the website periodically to make sure you're current on the requirements.*

- Complete at least 18 credits of courses numbered 500-600 at the University of Washington.
- Complete at least 18 numerically graded credits of 500-level and approved 400-level UW courses prior to the General Examination.
- Complete a minimum of 90 credits, at least 60 of which are UW credits.
- Compile a minimum of 27 dissertation credits over a period of at least three quarters. With the exception of summer (when the limit is 2), students may take a maximum of 10 dissertation credits per quarter.
- Maintain a minimum cumulative GPA of 3.00. Please note that you must earn a 2.7 or higher in all required courses and maintain a 3.0 overall GPA.
 - Grades below 2.7 count toward your cumulative GPA even though the credits cannot be counted toward your degree.
- All required courses must be taken for a numerical grade unless otherwise determined by the department.

- Pass the General Examination.
- Pass the Final Examination (includes approval of the dissertation by your supervisory committee).
- Maintain full- or part-time graduate student registration at the UW for the quarter in which the above examinations are completed and the degree is conferred.
- Complete all work for the doctoral degree within ten years.
 - The MoIE expectation is that students finish their degree within 5-5.5 years. Any student going over 6 years will be asked to meet regularly with the Graduate Program Advisor (Doug) and Director of Education (Al) to establish a degree timeline and justification for the length of study.

MoIE Core Program

The MoIE Ph.D. program will be separated into two focus areas, “CleanTech” (CT) and “BioTech,” (BT) and consists of core courses, elective courses and research. The core coursework (18 credits) and elective coursework (18 credits) are unique on campus and strongly tailored to the mission of the MoIES Institute. The total minimum required credits for the Ph.D. equal 90 credits. The first milestone towards the Ph.D. is the preliminary exam taken in the Autumn quarter of the second year. The second milestone is the non-thesis Master of Science (M.S.). The program credit requirements are in accordance to the Graduate School for Ph.D. programs. The program is sustainable, as it is tied to departmental efforts with instructors provided by the co-listed departments.

The MoIE core coursework (18 credits) is composed of the following courses:

	<u>Credits</u>
- MoIE I: Fundamentals on Molecular Properties and Material Functionalities (3 cr.)	3

- MoIE II: Advanced Molecular Bioengineering (3-4 cr.)	3

- MoIE-S: Molecular Engineering Seminar (1 credit, 3 Years in Autumn/Spring/Winter)	9

<i>for CleanTech focus:</i>	
- MoIE-CT: Organic Electronic and Photonic Materials (3 cr.)	3

<i>for BioTech focus:</i>	
- MoIE-BT: Intro to Synthetic Biology (3 cr.) (offered by EE, co-listed as EE523, BioE599D, and CSE586)	3

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The core course sequence consists of (i) three graduate-level courses, of which two (MoIE I and MoIE II) are mandatory for all MoIE students, and one (i.e., MoIE-CT or MoIE-BT) is specific to the selected focus area, and a seminar (MoIE-S). The seminar follows the students over three academic years (year 1-3).

MoIE-I: Fundamentals on Molecular Properties and Material Functionalities covers the fundamental properties of molecular building blocks, their interaction and assembly mechanisms and relationships to material phase properties and system functionalities. This course provides mathematical analytical tools to model complex systems. This course is offered to entering first year students jointly with ChemE, who provides the instructor.

MoIE-II: Advanced Molecular Bioengineering focuses on Fundamentals of molecular recognition and design: thermodynamics, dynamics, kinetics. Molecular design of macromolecules and recognition processes for current molecular engineering applications in biomedicine. Therapeutics based on cells. This course ties to practical applications in multiple emerging technologies in Biotechnology (BT) and Clean Technology (CT), and is offered to entering first year students jointly with BioE that provides the instructor.

MoIE-S: The Molecular Engineering Seminar features weekly research presentations from national and international experts in Molecular Engineering in CT and BT. It is offered jointly with the Nanotechnology and Molecular Engineering (NTME) seminar, and is supported and run by the MoIE Institute.

MoIE-CT: Organic Electronic and Photonic Materials covers physical and material concepts determining properties of organic electronic and photonic materials. Discusses electronic structure, physico-chemical characterization, and device application. Includes introduction of electronic band structure of polymers, electrically conducting polymers; organic nonlinear optical electroluminescent materials; polymer optical fibers; two-photon absorption materials for 3-D microfabrication. This course is offered jointly with MSE that provide the instructor.

MoIE-BT: Intro to Synthetic Biology Studies mathematical modeling of transcription, translation, regulation, and metabolism in cell; computer aided design methods for synthetic biology; implementation of information processing, Boolean logic and feedback control laws with genetic regulatory networks; modularity, impedance matching and isolation in biochemical circuits; and parameter estimation methods. This course is offered jointly with EE, BioE, and CSE.

The core program is complemented through research experiences and elective courses.

MoIE Elective Program

MoIE Ph.D. elective courses are split into “Outside of Focus Area Elective” (3), “Research Facet Electives” (9) and “Free Electives” (6). Each course can only count towards one category. At least one course in each research facet is required. An approved and regularly updated list is provided to the students for focus area and research facet electives. The list of elective courses is set by GSIC.

- Synthesis Assembly and Design
- Characterization and Analysis
- Theory, Computation and Modeling

The MoIE Ph.D. elective course program (18) is composed of

	<u>Credits</u>
<i>I. Outside of Focus Area Elective (3)</i>	
- Elective in CleanTech	
Or	3
- Elective in BioTech	

<i>II. Research Facet Electives (9)</i>	
- <i>Synthesis Assembly and Design</i> : Elective (3)	3
- <i>Characterization and Analysis</i> : Elective (3)	3
- <i>Theory, Computation, Modeling</i> : Elective (3)	3

<i>III. Free Electives (6)</i>	6
	<hr/> 18

Program Credit Requirements

A minimum of 63 research credits (600 or 800) are required, yielding a minimum total credit count of 90, not including seminar credits.

Minimum Program Credit Requirement for Ph.D. (and M.S.)

MoIE Ph.D. Courses	Minimum Credit Requirement Ph.D. (M.S.)
Core / Focus Area (excluding seminars)	9 (9)
Electives within "Categories" - CleanTech or BioTech (3) - Research/Design Facets (9)	12 (12)
Free Electives (research specialty)	6 (6)
Research Dissertation (600/800)	Up to 10/quarter (2 in summer)
MS (intermediate milestone)	35 (35)
600	<u>28</u>
Ph.D.	
800	
<i>Total Minimum Degree Credit</i>	90 (57)
Seminars (3 years, 9 quarters)	9 (5)

Research credits are earned as research assistants under the supervision of MoIES faculty advisors.

MoIE PhD Data Science Option

The ability to manipulate and understand data is increasingly critical to discovery and innovation. The vast majority of scientific and engineering disciplines, including molecular engineering, have entered an era in which discovery is no longer limited by the collection and processing of data, but by the management, analysis, and visualization of data. Therefore, the next-generation of scientists need to be prepared to manipulate and understand large, dynamic data sets. See: <https://www.moles.washington.edu/phd-program/current-students/data-science-option/>

Description

The Molecular Engineering (MoIE) Graduate Program offers a Data Science Option (DSO) to MoIE graduate students so that they can receive credentialed training in the analysis of large datasets. The goal of this option is to introduce students to the foundations of data science, and provide them with techniques and tools that they can apply to their own research. This option is primarily designed for students with little or no background in data

science, computer science, or coding, and is directed towards students who want to become proficient “tool users” as opposed to “tool builders”.

Students who complete the requirements outlined below will have the option included as part of the degree title that appears on their transcript.

Requirements

Students must complete approximately 10-14 course credits (3 courses at 3-4 credits each) and 2 seminar credits. DSO taken from software development, statistics and machine learning, and data management and data visualization categories will take the place of the 6 credits of electives in the degree audit. If planned carefully, students selecting the DSO will only take 2 additional credits (Data Science Seminar credits).

I. Students must take a course from two of the following three areas:

1. Software development for data science

Highly recommended courses:

- Software Development for Data Scientists: (CSE 583)
- Software Engineering for Molecular Data Scientists: (ChemE 546)

2. Statistics and machine learning

Highly recommended courses:

- Introduction to Machine learning: (CSE 416/STAT 416)
- Introduction to Statistical Machine Learning: (STAT 435)

3. Data management and data visualization

Highly recommended courses:

- Introduction to Database Systems: (CSE 414)
- Data Visualization: (CSE 512/CSE 412)
- Information for Visualization (HCDE 411/511)
- Interactive Information Visualization: (INFX 562)

II. Register and attend the weekly eScience Community Seminar for at least 2 quarters

III. Fulfillment of the core MoIE Program Research Facet: “Theory, Computation and Modeling”.

MoIE students are already required to **fulfill the research facet: Theory, Computation and Modeling** to attain their Ph.D. in molecular engineering. Courses that satisfy this requirement are offered by a variety of departments including bioengineering, chemistry, chemical engineering, electrical & computer engineering, computer science & engineering, materials science & engineering, mechanical engineering, and physics.

eScience Institute

The MoIE data science option is supported by the [eScience Institute](https://escience.washington.edu/). Students interested in data science should also check out other activities organized by the eScience Institute such as tool and method-oriented workshops as well as speaker series.

Visit <https://escience.washington.edu/> for more information.

Eligibility

All full time Ph.D. students in the MoIE program who are in good standing are eligible to participate in the data science option.

Questions should be emailed to the MoIE Graduate Program Advisor (Doug Ballard; dougb83@uw.edu).

Written and Oral Exams

Selecting a Dissertation Advisor/Principal Investigator and Research group

Additional mentoring resources are online at: <https://grad.uw.edu/for-students-and-post-docs/core-programs/mentoring/>

The Graduate Faculty Locator provides names and details of faculty with Graduate Faculty Status at:

<https://grad.uw.edu/for-faculty-and-staff/graduate-faculty-locator/>

Once your thesis advisor has been selected, he or she will provide guidance in selecting a dissertation research problem, in selecting a Dissertation Committee, and in other aspects of your graduate career and professional development. The Chair should have adequate time available and be willing to assume principal responsibility for advising you until completion of your degree. Your research advisor has primary responsibility for your guidance, including feedback on your research performance. Your supervisory committee provides added perspective, and you should consult committee members whenever you feel the need.

Formation of a Supervisory Committee

You should appoint your Supervisory Committee by the end of the Spring quarter of your first year in the program, and no later than four months prior to the General Examination. Your Dissertation Advisor should be a key resource for recommending additional committee members, but you can also review the **Graduate Faculty locator** database online to seek other possible committee members.

Selecting Your Committee:

- Committee should be made up of a minimum of 4 faculty members, one of which is your Dissertation Advisor (who typically serves as the Chair).

- One of the committee members will be the Graduate School Representative (GSR), whose primary role is to serve as your advocate, making sure the examinations are conducted fairly (see Selecting the GSR below).
- At least three of the four committee members (including the Chair and GSR) must be members of the Graduate Faculty with an endorsement to chair doctoral committees.
- At least three of the four committee members must be UW Faculty.
- A majority of the voting members must be members of the Graduate Faculty.
- Once you have selected your potential committee members (in consultation with your Dissertation Advisor), e-mail their names and departments to the Graduate Program Advisor so that they can be submitted to the Graduate School to be formally appointed as your committee.

The Graduate School Representative (GSR) is a voting member on a doctoral committee whose responsibilities are to:

- Represent the broad concerns of the University with respect to high standards of scholarly performance;
- Provide, for The Graduate School, a non-specialist's view of the quality of the student's work, ensuring that the student's mastery of the subject matter is broad and comprehensive;
- Assure that all procedures are carried out fairly and according to the guidelines of The Graduate School;
- Participate in conducting both the General and Final examinations;
- Provide a report to The Graduate School immediately following the examinations (after the exam is scheduled, this report is available in MyGrad - Faculty View)

Selecting the GSR:

- GSRs are selected by the student in consultation with the committee chair(s) and/or the Graduate Program Coordinator (GPC - faculty advisor).
- May not be a core faculty member in your mentor's department.
- Must hold an Endorsement to Chair a doctoral supervisory committee (you can check this on the **Graduate Faculty locator**).

- Must present no conflict of interest (budgetary relationship or the like) with the departments of either the student or the supervisory committee chair (confirm with your committee chair that no conflicts of interest exist).

Prior to appointing your committee it is wise to also review the Graduate Schools' **Doctoral Supervisory Committee roles and responsibilities.**

Preliminary Exam

Your Supervisory Committee guides you throughout your tenure in the graduate program. This will be the evaluation committee for your Preliminary Exam. Upon successful completion of the exam and after further research activity you may decide to change some of your committee members or add committee members, given new research directions or other concerns. The Supervisory Committee that guides you through the General Exam and Final Exam does not have to be the same as the Supervisory Committee that oversees your preliminary exam (although it typically is the same).

The Preliminary Examination is the first test, after admission, of a MoIE student's potential for a successful career in original research at the doctoral level. The Preliminary Exam is designated to evaluate a student's scientific knowledge, research, and presentation skills, creativity and time management. The Exam must be taken in the Autumn quarter at the beginning of the second year. If a student is asked to retake the Preliminary Exam, the reexamination must be completed by the end of the Winter quarter in the same academic year. Failure to complete the Preliminary Exam on time will result in academic probation. There are NO exemptions from the Preliminary Exam – students cannot waive this requirement. Students are asked to plan ahead as coordinating faculty schedules may be difficult. On occasion, unavailability of the faculty may require a delay of examination; in this case, a student may submit a petition, to be reviewed by the GSIC, for a delay of no more than one quarter.

During this exam, written and oral reports to the student's Ph.D. preliminary supervisory committee will be delivered. To qualify to take the exam, the students must have a Cumulative GPA of at least 3.3 based on at least 15 credits of approved 400- and 500-level UW courses. Those having a Cumulative GPA lower than 3.3, or fewer than 15 credits may petition the GSIC for a modification to the Cumulative GPA requirements or timeline for a delay of no more than one quarter.

The preliminary exam evaluates the ability

- gained through core coursework on synthesis, modeling and characterization
- to analyze and critique research done by others (via a paper review)
- to conduct original, independent research based on a written report on the research completed and plans towards the General Exam.

Students must pass the Preliminary Examination to remain in the PhD program.

The overall format includes:

- Oral evaluation of Molecular engineering knowledge, oral presentation of the students work up to current date, and oral presentation of future research goals (.75 hours)
- Critique of recent research paper/journal article. The advisor coordinates selection of the paper to be critiqued (.75 hours).

- One week prior to the exam (or no later than 2 weeks after receiving the article) –

The student submits a written Preliminary Exam Critique Report (and a clean copy of the paper and any supplementary information) to each committee member. The requirements for Preliminary Exam Critique Report are:

- The main body of the document must not exceed five pages. The main body includes the narrative, figures, equations, tables, and results of calculations. References (which should absolutely be included) and Appendices are not included in the page limit. Appendices may include a statement of help received, lengthy calculations or data, or non-essential figures. Any information or details that are essential for your analysis must be in the main body.
- Use a narrative format (bulleted or numbered lists may be included but should not be used exclusively). Use single spacing. Margins should be 1" on all sides. Number the pages and figures. Font size should be Times New Roman 11 pt.
- Analyze the article – don't summarize it. Note the significance of its contribution(s) to the literature (if any). Identify specific strengths and weaknesses. Support your analysis with sound logic, literature references, data, and/or calculations.

You may ask anyone for general guidance regarding expectations, but you must prepare the written and oral reports without technical or editorial assistance. For example, discussion of the paper with fellow students, editorial proofreading, correspondence with the paper's authors, and a practice run of the oral presentation to your research group are prohibited. If in doubt regarding the extent of help allowed, consult the GPC. Document all help received in an appendix to the critique (if none, say so).

- An insightful critique of the paper is necessary but not sufficient. Your committee will expect you to demonstrate in-depth knowledge of all fundamentals related to the paper, especially during the oral presentation. Expect questions that probe your knowledge of fundamentals and the logic behind your analysis. Prepare accordingly!

- Also one week prior to the exam –

-

The student submits to each committee member a written summary of the progress achieved to date. This written summary should include:

- A rationale for the research, a brief description of the methodology, results, discussion, and conclusions.

- A brief (one page maximum) discussion of research plans.

For the progress summary, rules regarding format and length are as for the article critique. We expect you to discuss ongoing research with your advisor and others, but you must prepare the research report unaided, and no one may review it before you submit it.

- The exam, which should be scheduled for two hours maximum, consists of two parts –

- An oral presentation by the student of her/his critique, followed by committee questions on the critique and scientific and engineering fundamentals related to the paper. The student should expect to present her/his critique for approximately 15 minutes and the committee is expected to spend the remainder of the 45 minutes asking questions that probe the student's understanding of fundamentals related to the paper and the logic behind the student's analysis. Use appropriate visual aids (presentation slides, etc.).
- An oral presentation by the student of his/her research, followed by questions from the committee that probe the student's (1) understanding of fundamentals related to his/her research, (2) ability to correctly interpret and analyze the data, (3) knowledge of the related literature, and (4) the logic behind the analysis. The student should plan to present for 15 minutes (assuming no interruptions), and the question and answer part will last approximately 30 minutes. The student should be prepared to give prompt, correct, and concise answers to the questions.

General Exam & Admission to Candidacy for Doctoral Degree

It is your responsibility to know the complete Graduate School requirements for the General Exam. This information is to serve as a guide.

Successful progression into candidacy for the Ph.D. demands mastery of research approaches and relevant scientific literature. It is expected that by the time of the examination the student will have performed sufficient preliminary work to allow the Supervisory Committee to assess the likelihood of successful completion of the proposed PhD. To this end, graduate students in Molecular Engineering are required to write up as well as present the plan of their thesis research. This requirement is intended to encourage thoughtful design of an effective research strategy and comprehensive understanding of the relevant issues at an early stage of the overall research effort.

Note: It is expected that the General Exam be completed in the Autumn Quarter of the student's 4th year. If a delay is needed, a student may submit a petition, to be reviewed by the GSIC, for a delay of no more than one quarter.

The requirements and procedures for the exam are as follows:

- (a) Finalize your Supervisory Committee members. These may be different from the committee members who oversaw your Preliminary Exam. Communicate the members of your final committee to the GPA. The GPA will communicate this information to the Graduate School. You and the Supervisory Committee members will receive an email indicating the committee has been established.
- (b) Discuss your research progress with your Research Advisor, and first obtain their approval to attempt the exam. Next, consult with all members of your Supervisory Committee. All members must agree that the student's background of study and preparation is sufficient and have approved the student to schedule a General Examination. If all members agree, then establish a date and time.
- (c) At least four members of the Supervisory Committee must attend (including the chair, the GSR, and one other Graduate Faculty member). Please note that the Graduate School has specific rules for Video Conferencing and how to proceed if a Supervisory Committee member does not show up.
- (d) At least 3 weeks prior to the exam, make a request to schedule the General Exam through MyGrad Program.
- (e) Send the GPA an email to let them know you've submitted your request, so that he may go into the online system and provide departmental approval. You and your Chair will be provided a copy of the exam warrant, which your committee members will need to sign and return after your exam. These results will then be submitted to the UW Graduate School.
- (f) At least 2 weeks prior to the exam, submit the written component of your exam describing progress to date and your plans to complete the dissertation to each member of your Supervisory Committee.

Written Exam Format:

The thesis proposal should be approximately 40-50 pages long (double spaced in 11-point or 12-point font) including additional pages of figures and references. It is expected that if no major changes occur in the direction of the student's research, parts of the written exam could eventually function as the introduction to the dissertation. It is necessary to have a clear view of the issues to be addressed in the dissertation. Furthermore, if the direction of the dissertation is not in sharp focus at the time of the examination, it is difficult for the Supervisory Committee members to accurately assess the student's readiness to proceed. For these reasons we strongly advise students to confer directly with all their committee members about the direction of their dissertation prior to commencing the written portion of the examination. While students should confer with their research supervisors about the appropriate weighting of each section, the content should generally be as indicated below:

- **Research Plan**
Briefly describe the key issues and how you plan to achieve an experimental solution. You should specify one or more clear-cut hypotheses and define a few (2-5) specific aims that will enable you to test each hypothesis.
 - **Background**
Describe in detail how this problem has been studied in the past, what was learned, what remains unsolved, and why.
 - **Preliminary Findings**
Describe work you already have done on the problem and discuss your data. If relevant data are lacking, describe related kinds of work you have done and how the skills and findings learned from this work influences your plans for the proposed work.
 - **Methods of Procedure**
Detail the technical aspects of your planned work with regard to each of your specific aims. What specific experimental procedures will you employ? Where applicable, justify your use of the specific procedures chosen as opposed to others that may be available.
 - **Alternative Approaches**
You should be prepared in your oral examination to discuss how the broader scientific issues you are proposing to address in your work might be studied via another experimental method. Outline at least one such alternative approach here in your written preparation.
 - **Significance**
How might you expect your future findings to advance scientific knowledge more broadly and/or benefit society?
- (g) 1 week prior to the exam, remind your committee members of the date, time, and location. Email is okay, but if you do not get a prompt response, follow-up with phone and/or personal contact.
- (h) A few days before the exam, verify that the GPA has placed the warrant (which must be signed after the exam) and the GSR report in your file. Your committee

chair must bring these to the exam. If the warrant isn't available at the beginning of the exam, the GSR will not allow it to go forward. Your committee chair should bring it to the exam along with your transcript records.

- (i) During the exam, you will give an oral presentation of your proposal. The committee will ask questions. After this you will be dismissed and the committee will discuss your performance. They will indicate the final outcome on the warrant.

Oral Exam Format:

The oral presentation general lasts approximately one hour (30 minutes for the student's presentation and 30 minutes for the question and answer period).

- Give a brief (20-30 minute) presentation of the thesis project: salient background, major questions and results to date, and projections for the immediate future.
 - Answer questions (approximately 30 minutes) concerning the basis of experimental procedures employed, the conclusions drawn from the results to date, and possible alternate strategies.
 - Be able to demonstrate an understanding of other experimental approaches being used to answer the same and related questions.
 - Be able to describe and evaluate the major experimental and/or conceptual foundations of the thesis project.
- (j) If the General Examination is satisfactory, the Supervisory Committee members who participate at the examination sign the warrant and return it to the GPA. If an examination is unsatisfactory, the Supervisory Committee may recommend that the Dean of the Graduate School permit up to a maximum of two additional reexaminations after a period of additional study. Any members of a supervisory committee who do not agree with the majority opinion are encouraged to submit a minority report to the Dean of the Graduate School.
 - (k) When the Graduate School approves candidacy, the student is designated as a candidate for the appropriate doctoral degree and is awarded a candidate certificate. After achieving candidate status, a student ordinarily devotes his or her time primarily to the completion of research, writing of the dissertation, and preparation for the Final Examination.

Make sure to read the Doctoral Degree Policies for the General Examination page from the Graduate School.

Dissertation & Final Exams

The doctoral dissertation is a document that demonstrates that its author has completed an original and independent investigation of a significant problem. The dissertation reflects the student's competence to deal with a significant research problem, to understand its position in the field of Molecular Engineering, to glean significant information from the work done and to master the techniques necessary to extract,

interpret and use the data that come from the work. The dissertation provides evidence that the student can recognize an important problem, acquire the data to answer the questions posed within that problem, and extend the results of the answered questions to other problems of significance.

As mentioned earlier within this Student Handbook, (in the General Exam procedures), the 40-50 page long proposal written and presented as part of the General Exam should be able to function as the introduction to the final dissertation, assuming no large changes to research direction between the General and Final Exams.

- All graduate students are required to submit an Electronic Thesis/Dissertation (ETD), including students using the Graduate Registration Waiver Fee. The Graduate School's Style and Policy Manual for Theses and Dissertations outlines format requirements. It is available on-line at:
<http://www.grad.washington.edu/students/etd/info.shtml>.
- The Dissertation should be submitted to your Reading Committee at least 15 days before your examination date. Feedback should be incorporated into the document before the exam itself occurs.

The exam itself consists of public and private portions. The exam begins with a short private meeting where upon the Supervisory Committee discusses the Candidate's progress (transcripts, Preliminary Exam results, General Exam results, etc.). Next, the public is invited in and the candidate gives an oral presentation of their dissertation. The presentation should last no longer than 50 minutes. There will then be time for questions from the general audience. Next, the public is dismissed, and the Supervisory Committee questions the Candidate in private. After this questioning, the Candidate is dismissed and the Supervisory Committee discusses the dissertation and defense. Also, the Supervisory Committee will decide whether the dissertation requires revision. The Reading Committee's approval (prior to the exam) means that only minor changes should be needed at this point.

Graduating/graduation related dates and requirements

For some high-level information related to graduation dates and requirements, I suggest reviewing the below links:

- Dates and Deadlines: <https://grad.uw.edu/for-students-and-post-docs/degree-requirements/dates-and-deadlines/>
- Preparing to Graduate: <http://grad.uw.edu/for-students-and-post-docs/degree-requirements/preparing-to-graduate/>
- Thesis and Dissertation: <http://grad.uw.edu/for-students-and-post-docs/thesisdissertation/>
- Master's Degree policies: <http://grad.uw.edu/policies-procedures/masters-degree-policies/>
- Doctoral Degree policies: <http://grad.uw.edu/policies-procedures/doctoral-degree-policies/>

The student must be registered during the quarter that he or she graduates unless the Registration Waiver Fee option is used. All appropriate deadlines must be met or the degree will not be conferred. The degree will be posted to the UW transcript 3-4 weeks after the end of the quarter in which it is conferred. Diplomas are mailed out approximately 3-4 months later.

The University's main graduation ceremony is held immediately after the end of spring quarter. August graduates are allowed to walk in the June ceremony. The web site is at www.uwgraduation.com. The Department holds its own graduation celebration, during which our PhD graduates are recognized and honored.

Questions regarding Graduation can be directed to Graduate Enrollment Management Services, G-1 Communications, 685-2630 or by e-mail: uwgrad@uw.edu. The Office of Ceremonies is at (206) 543-2592 or commence@uw.edu.

Applying for graduation

You must apply for graduation by the seventh week of the quarter. Otherwise you'll be charged a late fee. You apply on-line. For details, consult the Graduate School website.

Once you've applied, the Graduate School will evaluate your transcript to see whether or not it satisfies the Graduate School's minimum requirements. If so, they will send the department your degree application. The examining committee must sign this at your Final Exam.

NOTE: You must maintain UW registration as a full- or part-time student for the quarter in which the degree is conferred.

Publishing your Doctoral Dissertation

All graduate students are required to submit an Electronic Thesis/Dissertation (ETD), including students using the Graduate Registration Waiver Fee. The Graduate School's Style and Policy Manual for Theses and Dissertations outlines format requirements. It is available on-line at: <http://www.grad.washington.edu/students/etd/info.shtml>.

Policies and Procedures

Substitutions, Waivers & Petitions

Submit a separate form for each waiver, substitution, or petition. Waivers, substitutions, and petitions should be submitted to the Counseling Services Coordinator as soon as possible. Waivers, substitutions, and petitions are subject to the rulings of the Executive Committee and are not guaranteed.

Request a waiver when you wish to be exempt from a core requirement on the basis of previous training or experience. Note that the approval of waivers is not guaranteed and waivers do not reduce the total number of required credits for the degree; they simply free credits for electives.

Courses taken in a prior MS degree may introduce more flexibility into the MoIE program. If the prior degree covers some of our PhD requirements, the student can request to take other courses, either to gain depth in the chosen area or to explore another field. The student and the faculty advisor should plan such variations from the standard curriculum.

Request a substitution when you seek approval to substitute another course for a core requirement. Such requests should present a compelling educational reason for the substitution and must have the faculty advisor's approval.

Under some conditions the total number of credits required for the PhD may be reduced; normally, however, students will be expected to explore and further their research capabilities via alternative or substitute course work. In addition to the faculty advisor's approval, instructor review and approval is preferred for UW course waiver and substitution requests.

Request a petition only after receiving instruction and approval from the Counseling Services Coordinator. Extenuating circumstances in which a student may petition may include (but are not limited to) requesting part-time Graduate Student Status, requesting a reduction in the total number of credits required for the PhD, requesting on-leave status, or to request individual review relating to any Graduate or Department milestones. A petition will typically be written in letter format (no more than 1 and ½ pages single spaced typed, addressed to the Executive Committee) and will provide necessary background regarding the request, and the student's anticipated course of action moving forward should the petition be approved.

NOTE: PI review and written approval is preferred for petitions involving on-leave or where most departmental milestones are concerned.

Grading

Numerical grading scale

Like most of the UW, MoIES uses a numerical grading system. Instructors may report grades from 4.0 to 0.7 in 0.1 increments, and the grade 0.0. The latter denotes failing work or unofficial withdrawal. The equivalence between our numerical system and the traditional letter grades is as follows:

A 4.0-3.9

A- 3.8-3.5

B+ 3.4-3.2

B 3.1-2.9

B- 2.8-2.5

C+ 2.4-2.2

C 2.1-1.9

C- 1.8-1.5

D+ 1.4-1.2

D 1.1-0.9

D- 0.8-0.7 Lowest passing grade.

E 0.0 Failure or Unofficial Withdrawal. No credit earned.

You may obtain additional information on grades from the Academic Records Office, 264 Schmitz.

You may also receive one of the following grades:

N Indicates that you are making satisfactory progress. A final grade will be given at the end of the quarter the work is completed. Used only for courses not completed in one quarter, such as project and thesis work, e.g., MOLENG 600 and 800.

I Incomplete. An instructor may assign this grade only when you have been attending and doing satisfactory work until within two weeks of the end of the quarter, and you furnish proof satisfying the instructor that you can't complete the work because of illness or other circumstances beyond your control. The instructor must file (with the head of the unit offering the course) a written statement listing the reasons for the incomplete and indicating the work required to remove it.

To obtain credit (and a final grade), you must convert an *I* into a passing grade no later than the last day of the next quarter in residence. *NOTE: Do not reregister for the course!* In no case can you convert an *I* into a passing grade if more than two years elapse (however the Dean of the college offering the course may waive this rule).

S Satisfactory grade for courses taken on a satisfactory/not-satisfactory basis. The instructor actually gives you a numerical grade, but the Registrar converts it to either an *S* or an *NS* (see next section). You receive credit for the course, but the grade has no effect on your GPA.

NS Not-satisfactory grade for courses taken on a satisfactory/not-satisfactory basis. You receive no credit, but your GPA is unaffected.

CR Credit awarded in a course offered on a credit/no-credit basis (see next section). You receive credit, but your GPA is unaffected.

NC Credit *not* awarded in a course offered on a credit/no-credit basis (see next section). Your GPA is unaffected.

W Official withdrawal or drop from a course from the third through the seventh week of the quarter for undergraduates. A number designating the week of the quarter is recorded with the *W* when a course is dropped. It doesn't affect GPA calculations.

HW Grade assigned when a graduate is allowed a hardship withdrawal from a course after the 14th calendar day of the quarter. It doesn't affect GPA calculations.

NOTE: If you withdraw unofficially, you will receive a grade of 0.0.

Non-traditional Grading Options

Credit/No Credit as a Course Option With appropriate departmental review and approval, a course may be offered on a credit/no credit – only basis. The standard for granting credit in credit/no credit – only courses under this option is the demonstration of competence in the material of the course to the instructor's satisfaction. This option differs from the *S/NS* option in that *all* students in the course are graded either *C* or *NC*, and the instructor assigns these grades directly.

Satisfactory/Not-Satisfactory Grading Option With the approval of your Supervisory Committee Chairperson, you may elect to take any course for which you are eligible *outside of MoIE* on an *S/NS* basis. Such courses count toward *graded* course work in graduation requirements but have no effect on your GPA. As a graduate student, if you earn a grade of 2.7 or above, you receive an "S"; 2.6 or below converts to an "NS."

Grade Reports

Use MyUW or contact the instructor to check final grades. They are usually available within two weeks after the quarter ends.

Academic Performance/Scholarship

You must achieve a *cumulative GPA* of 3.00 or above to graduate. Your GPA depends on numerical grades earned in 400- and 500-level courses *only*.

Failure to maintain a 3.00 GPA, either cumulative or for a given quarter, constitutes low scholarship, and the Graduate School may take action, which – depending on the circumstances – can be a warning, probation, or dismissal.

Grievances/Difficulties

Students are encouraged to speak first with the Counseling Services Coordinator. Together the student and Counselor will work to find a positive solution. If the student feels a suitable solution has not been found, the student may submit a petition to the Executive Committee. In all cases the student has the option of following the Graduate

School's grievance guidelines: <http://www.grad.washington.edu/area/grievances.htm> and <http://www.grad.washington.edu/policies/memoranda/memo33.shtml>

Grade changes and appeals

No instructor may change a grade submitted to the Registrar *unless* the instructor erred when assigning it. If you think you were improperly graded, discuss the matter with the instructor. If you aren't satisfied with the instructor's explanation, submit a written appeal to the Department Chair, with a copy to the instructor. The Chair consults with the instructor to ensure that the evaluation has not been arbitrary or capricious.

Should the Chair believe the instructor's conduct to be arbitrary or capricious, and the instructor declines to revise the grade, the Chair appoints one or more faculty members to evaluate the student's performance and assign a grade.

Once a student submits a written appeal, this document and all subsequent actions are recorded in written form for deposit in a department or college file.

In no case can a grade be changed after a degree has been granted. *i.e.*, the department offering the course, not necessarily MoES. If a non-departmental program offered the course, submit the appeal to the college dean.

Repeating a course

As a graduate student you may repeat any course. Both the first and second grades count in your cumulative GPA. Subsequent grades will *not* affect your GPA, but will appear on your permanent record. In any case, only one instance of the course applies toward total degree credit requirements.

Withdrawals

IMPORTANT: Consult the quarterly Time Schedule for specific deadlines.

Dropping courses

You may drop courses without restriction through the second week of the quarter. No record of such dropped course(s) will appear on your transcript.

You may drop one course per quarter using the self-serve quarterly drop via MyUW. You are eligible to drop 1 course in this way between the 3rd week and the last day of instruction for the quarter known as the Late Course Drop Period. In this case, the withdrawal will appear on your transcript.

To drop more than one class during the Late Course Drop Period, you may use the advisor-assisted drop process. For more information on the advisor-assisted drop process and the registrar drop procedures please visit:

<https://registrar.washington.edu/students/current-quarter-drop/>

Withdrawal for the quarter

It is your responsibility to withdraw if you are unable to finish the quarter. You may do so through the last day of instruction. Write or appear in person at the Registration Office, 225 Schmitz Hall, University of Washington, Box 355850, Seattle, Washington, 98195-5850.

Courses dropped as part of a complete withdrawal from the University during the first two weeks of the quarter are not recorded on your UW transcript. The date of a complete withdrawal is recorded, however.

Readmission after loss of graduate status

If you've failed to maintain graduate student status but wish to resume studies, you must apply in person or by mail for readmission to the Graduate School by the published closing dates. If you are readmitted, registration will occur during the usual registration period. If you've attended any other institution in the interim, the UW will require official transcripts (in duplicate). An application for readmission carries no preference, *i.e.*, it is treated as an application for initial admission. It also requires payment of the usual application fee.

Vacation Guidelines/On-Leave status

To maintain graduate status, you must be enrolled on a full-time, part-time, or official On-Leave basis from the time of first enrollment in the Graduate School until completion of all degree requirements. You must be *registered* when applying for the Master's degree, passing the Master's final examination or Ph.D. general or final examinations, filing the thesis or dissertation, and receiving the degree. You must also be registered if you have a TA or RA appointment. Failure to maintain continuous enrollment constitutes evidence that you have resigned from the Graduate School.

NOTE: The Graduate School normally allows six years to complete requirements for a Master's degree, and 10 years for a Ph.D. Periods spent On-Leave or on an unofficial leave status count when computing the total elapsed time.

To be eligible for On-Leave status, you must have registered for and completed at least one quarter in the UW Graduate School. You must also have been registered or officially On-Leave for the immediate past quarter (except summer). If you have already registered, you may *NOT* go On-Leave for that quarter unless you officially withdraw before the first day of the quarter.

If you are On-Leave but register in any other status, *e.g.*, Extension, Graduate Non-matriculated, etc., it will negate your official On-Leave status.

Your *Petition for On-Leave status* must be approved by the MoIE Graduate Program Coordinator and submitted to the Registration Office (225 Schmitz Hall) no later than the fifth day of the quarter. This involves a nonrefundable fee, payable to the Cashier's Office (129 Schmitz Hall). With Departmental permission, you may go On-Leave for up to four consecutive quarters at one time. If you wish to extend that time, you must

complete another Petition for On-Leave form and pay another fee.

On-Leave status entitles you to use the UW libraries and maintain access to e-mail accounts. You are *NOT* entitled to extensive faculty and staff counsel, examinations of any type (except for language competency), thesis/dissertation filing, residency credit, University housing, student insurance, or any form of financial assistance. You may use the Hall Health Primary Care Center on a pay-for-service basis and may pay to use the IMA.

Returning from On-Leave status

July 1 for Autumn Quarter

February 1 for Spring Quarter

November 1 for Winter Quarter

June 1 for Summer Quarter

This requires a nonrefundable deposit, which applies toward your tuition.

Tuition and Funding

Tuition, Funding & Taxes

The following lists resources that have been used by graduate students in the past.

1. On Campus
 - [UW Graduate Student Financial Aid](#)
 - [The Graduate School webpage](#)
 - [COE - College of Engineering](#)
 - [UW Libraries - Grad Funding Info Service](#)
 - [Merit Scholarships, Fellowships, Awards](#)

Listed below are URLs for various funding sources. Please review these sites for possible funding opportunities. In particular, the NSF funds students who have entered their first or second year of grad work as long as they have not exceeded a certain number of credits.

2. Foundations/Companies
 - [NASA](#)
 - [INTEL](#)
 - [PNNL –Pacific Northwest National Laboratory](#)
 - [DOE - Department of Energy](#)
 - [NDSEG - National Defense Science and Engineering](#)
 - [NPSC- National Physical Science Consortium](#)

- [DOT – Department of Transportation](#)

Additional Outside Funding Opportunities

NIH grants home page - the basic gateway into NIH grants of all types - has information links to forms, instructions, processes etc. See the left side of the page for 'types of grants', F series <http://grants1.nih.gov/grants/oer.htm>

Predoctoral NIH fellowship (F31) -

To target your NIH search for funding specifically, check out the specific NIH institute that might support your work. Review the NIH roadmap (<https://www.niehs.nih.gov/funding/grants/announcements/roadmap/index.cfm>) and then check out the NIH home page for institute list: <http://www.nih.gov/icd/index.html>

National Science Foundation funding opportunities can be found at: <http://www.nsfgrfp.org/> Fellowships are awarded for graduate study leading to research-based master's or doctoral degrees in the fields of science, technology, engineering, and mathematics supported by the National Science Foundation.
Eligibility: U.S. Citizen, national, or permanent resident;

When to apply: Graduating seniors, prior to or during first year of graduate school, beginning of second year.

Deadlines: Various deadlines depending on fellowship; see web site for specific deadline date and GRE deadline date.

Ford Foundation Diversity Fellowships - <http://sites.nationalacademies.org/pga/fordfellowships/index.htm>

Eligibility: U. S. Citizen or national with evidence of superior academic achievement (such as grade point average, class rank, honors, other designations); Commitment to a career in teaching and research at the college or university level; Enrolled in or planning to enroll in an eligible research-based Ph.D. or Sc.D. program at a U. S. educational institution and have not yet earned a doctoral degree in any field.

Award: Approximately 60 Predoctoral Awards at \$20,000 per year for up to three years. Approximately 35 Dissertation Awards at \$21,000 for one year Approximately 20 Postdoctoral Awards at \$40,000 for one year.

U. S. Dept. of Energy (DOE) Computational Science Graduate Fellowship - <http://www.krellinst.org/csgf/>

Eligibility: U.S. Citizen or permanent resident; Students must be planning full-time uninterrupted PhD study at a U. S. University; Students in their first or second year of graduate study in the physical, engineering, computer, mathematical, or life sciences

are eligible to apply for the DOE Computational Science Graduate Fellowship. Exceptional senior undergraduates who can meet all the requirements listed here may also apply.

When to apply: Graduating seniors or first or second year graduate students.

Award: Payment of all tuition and fees; Yearly stipend of \$31,200; Allowance of \$1,000 annually for research; up to \$2,475 for computer workstation; renewable up to four years.

Department of Energy Office of Science Graduate Fellowship -
<https://www.energy.gov/science/office-science>

Funding Considerations

- ***Full-time enrollment*** : Most financial aid packages and assistantships require full-time enrollment (except in the Summer Quarter). Full-time enrollment requires registration for at least 10 credits.
- Students with Financial Aid packages (e.g., fellowships, student loans) should contact the Office of Student Financial Aid. ***Summer-quarter enrollment*** RAs and TAs should register for two credits. Here are some additional considerations:
 1. National Science Foundation Graduate Research Fellowship: 10 credits minimum.
 2. To prevent payroll from charging Social Security taxes (600-level students only): 5 credits minimum.
 3. To prevent loan payback from beginning (600-level students only): 5 credits minimum.
 4. International graduate students: Verify visa requirements. If unsure, contact the International Services Office.

Becoming a Washington State resident

Eligible U.S. citizens, permanent residents, and those on certain immigrant visas should apply for Washington State residency (international students on standard student visas are ineligible). The main advantage is that you become exempt from out-of-state tuition. This is an issue if you are unsupported or go off RA or TA funding for some reason. For example, you may want to accept a fellowship, or you may fail to meet the satisfactory progress milestones.

If you become liable for out-of-state tuition, the Department will not pay it for you. We will apply for an exemption on the behalf of those receiving fellowship stipends, and we nearly always succeed in this, but there is no guarantee. Thus, having Washington residency is a form of insurance. The non-resident tuition is currently about \$14,000

extra per year, so it's insurance worth having!

The residency rules were recently changed to make residency more difficult to obtain. See <http://www.washington.edu/students/reg/residency.html>, for the latest information and procedures.

Campus Resources and Directory

Campus Resources

The Graduate School has compiled an excellent set of guidelines to describe what the graduate student and advisor can expect of one another and general 'guidelines for good practice' in graduate education. See

<https://grad.uw.edu/for-students-and-post-docs/core-programs/mentoring/mentoring-guides-for-students/>

Get connected with your peers outside the Department through the GO-MAP office

<https://grad.uw.edu/diversity/go-map/> . You are also encouraged to join SEBA

<http://uwseba.com/> , NSBE <https://www.nsbeuw.com/> , WISER

<http://depts.washington.edu/wisir/> , SWE <https://www.uwswe.com/> , and SACNAS

<https://sacnasuwashington.wordpress.com/> .

To assist you in your preparation for post-graduate life, we encourage you to join the UW Alumni Association <http://www.washington.edu/alumni/>

Department Information

Mail, Phones, Fax & Photocopies

General Mailing Address for US Mail
Molecular Engineering & Sciences Institute
University of Washington
Box XXXXXX (see below)
Seattle, WA 98195-XXXX (last four digits of box number)

Campus box numbers are assigned by floor:

Ground Floor: Box 351651

1st Floor: Box 351652

2nd Floor: Box 351653

3rd Floor: Box 351654

4th Floor: Box 351655

General Mailing Address UW prefers for FedEx, UPS, DHL, etc.

Name or Lab Name
University of Washington
Molecular Engineering & Sciences Building Room #
4000 15th Ave NE
Seattle, WA 98195

Building Street Address for taxis, pickup, etc. (or if delivery method is unknown)

Molecular Engineering & Sciences Building
3946 W Stevens Way NE
Seattle, WA 98195

A good pickup/waiting location is the two “loading and unloading” parking spots on Stevens Way between Guthrie and the Chemistry Library.

Phones/Fax

Campus telephone numbers are 543-xxxx, 685-xxxx, 616-xxxx, and 221-xxxx. Call campus number by dialing the last five digits. For local calls outside the UW, dial a 9 to get an outside line followed by the local area code and the seven-digit number. To use a campus phone for long distance calls (including international calls) on official UW business only, dial a 9 to get an outside line then dial the number starting with a 1 and the area code. Follow similar instructions for use of the **FAX machine**.

Printing Posters

Contact Doug Ballard (221-6542, dougb83@uw.edu)

Keys & Security

Contact John Young (616-6627, johnny@uw.edu)

Lab Safety & Emergency Response

Contact John Young (616-6627, johnny@uw.edu) or your PI.

Supplies & Equipment

Department vs. Personal Expenses

As a general rule, graduate students must supply (and pay for) all materials required for their personal education. This includes, for example, textbooks, writing materials, photocopying, and printing (as needed for thesis/dissertation preparation, courses taken by the student or in exams required for the degree) and personal computer software and hardware.

On the other hand, graduate students often have RA or TA appointments and many expenses related to these should be charged to a UW research or instructional budget. As an RA, such charges include materials and supplies used directly in lab research, long-distance telephone calls when ordering lab supplies, photocopies of journal articles needed as research background, technical services (shop, literature searching), and research-related travel. For a TA, instructional photocopies and supplies should be charged to the appropriate departmental budget.

Some cases are ambiguous. When in doubt, a TA should ask the course instructor and an RA should consult the research adviser or the MoIE Administrator.

On-Campus Purchasing

On-campus sources include: Printing Services, Electrical Engineering Stores, the Physics Store and the Chemistry Store. You should check these on-campus sources before ordering from off-campus vendors. The UW has contracts for supplies and equipment with various off-campus vendors such as VWR and Boise Cascade through e-Procurement. Ordering using these contracts may save time and money. eProcurement offers a wide range of products to the campus community from office

supplies, to lab and glassware, medical and dental, custodial and maintenance supplies. Due to the high volume of purchases, eProcurement has established contractual relations with vendors and is able to offer large savings on many of the most commonly used items at the University. When items are purchased using these contracts, there is no limit. eProcurement allows you to place orders up to any amount approved by your faculty advisor. Your research group should have one or two designated purchasers on the eProcurement system that will place the orders for your group.

Payroll Information

Contact CCore@uw.edu regarding budgets, appointments, RA/TA payroll, and student insurance.

Getting your paycheck

There are two pay periods per month (1st-15th and 16th-30th/31st). Paydays are on the 10th and 25th of each month. If payday falls on a Saturday, you will receive your check the prior Friday. If payday falls on a Sunday, you will receive your check the following Monday.

Individuals who start employment between the 1st and 15th of the month will receive their first paycheck on the 25th. Those who start between the 16th and the end of the month will receive their first paycheck on the 10th of the following month.

Direct deposit of paychecks is available and highly recommended.

Online Direct Deposit

<https://isc.uw.edu/your-pay-taxes/paycheck-info/>

Where is a good place to open a bank account?

You may use any financial institution within the United States that participates in the Automated Clearing House (ACH).

Many financial institutions offer incentives such as free checking:

- Bank of America
- Chase Bank
- US Bank
- Washington State Employees Credit Union: <http://www.wsecu.org/>
- Wells Fargo

Change of address (while enrolled at the UW)

To ensure timely delivery of official UW documents and MoIE notices, report all changes in your mailing address. <https://registrar.washington.edu/students/address-changes/>

Health Care

Hall Health Primary Care Center (located on Stevens Way across from the HUB) is an outpatient clinic that provides health and medical care to currently enrolled students and their dependents. Services include preventive care, health education services, diagnosis and treatment of illness or injury, and mental health care, including individual and group therapy. The pharmacy fills prescriptions and provides over-the-counter drugs, contraceptives and other products at reasonable costs. Appointments are recommended.

Browse <https://wellbeing.uw.edu/> .

Commuting to Campus / Bike Info

Driving is the least convenient way to commute to campus because of traffic congestion and the expense. Public transportation is very convenient with hundreds of buses running through campus each day; you can use the U-Pass. Biking is popular because the Burke-Gilman trail runs through campus.

Commuting information can be found at: <https://transportation.uw.edu/> .

Seattle Department of Transportation offers a Seattle Bicycling Guide Map free of charge to the public. The map shows bike lanes, shared-use paths, and streets commonly used by bicyclists, as well as detailed views of the U-District & Montlake Area, the I-90 Bridge, the Ballard Bridge, the West Seattle Bridge, the 1st Ave South Bridge, Sea-Tac Airport Access and Downtown Seattle:

<http://www.seattle.gov/transportation/projects-and-programs/programs/bike-program/bike-web-map> .

Please refer to the specific information for proper bicycle parking and note that they are not to be parked in university buildings. Bicycles parked in violation are subject to seizure and impounding by the university. Impounded bicycles will be stored at the University Police Department and released at specific times upon presentation of proof of ownership and payment of a fine.

Molecular Analysis Facility

The Molecular Analysis Facility located on the ground floor on the Molecular Engineering & Sciences building provides more than 15,000 square feet of low vibration, low electromagnetic interference ground contact space that houses a wide variety of sensitive instrumentation and lab space for molecular characterization and analysis. <https://www.moles.washington.edu/facilities/molecular-analysis-facility/>

Student organizations

The Graduate & Professional Student Senate is a great opportunity to become involved.

<http://depts.washington.edu/gpss/>

The Science & Engineering Business Association (SEBA) is another great opportunity to become involved.

<https://www.uwseba.com/>