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Overview

Welcome to the Chemical and Biological Engineering Department at Montana State University! We are glad you're here. The CHBE department strives to be a warm, welcoming and inclusive place. This handbook serves as a reference document outlining departmental policies and provides guidance on where to find additional information. It also outlines the various roles and responsibilities of graduate students and faculty advisors.

Diversity and Inclusion Statement

The department of Chemical and Biological Engineering embraces the efforts to create a diverse and inclusive community at Montana State University. We reaffirm our commitment as a department to building and maintaining a culture that is safe and welcoming to all members. This includes, but is not limited to, supporting underrepresented members of our community that identify with diverse countries, cultures, tribes or nations, as well as veterans, nontraditional students, people who are differently abled, and students of all ages. We celebrate and welcome individuals that identify with various political or religious beliefs, gender identities, and sexual orientations. In addition to recruiting a diverse community, we are committed to promoting the success of a diverse student body, faculty, and staff while fostering a sense of security and belonging in our community. Diverse teams promote creativity in science and engineering and can therefore lead to more successful outcomes for engineering design and technology development. Our ultimate goal is to create a civil, supportive and respectful environment where difference is a source of strength.

Department Values

1. We believe that science and technology should be inclusive, and therefore should belong to the greater community.
2. We believe that all members of our department should have a respectful and safe environment in which to work and learn.
3. An inclusive learning environment requires active maintenance, and we are committed to continuously learning, growing, and improving ourselves and our department.
4. Our department recognizes the importance of community wellbeing, particularly in the context of mental health, and is committed to decreasing the stigma associated with accessing mental health services.

Health and Wellness Resources

- Montana State University [Counseling and Psychological Services \(CPS\): CPS offers counseling, confidential consultation, mediation, training, education, online screening tools, and crisis resources.](#)
- [Bozeman Help Center](#): The Bozeman Help Center staffs the 24-Hour Crisis Hotline and Referral Service. They accept calls from those who need support at all hours of the day or night for suicidal thoughts, depression, anxiety, or other personal problems. They also provide community referrals and answer local calls to the National Suicide Prevention Lifeline. Phone: **406-586-3333**
- Hope House: Hope House provides crisis stabilization for those experiencing a mental health crisis. Phone: **406-585-1130**

- [National Suicide Prevention Lifeline](#): Phone **1-800-274-8255**
- [MSU CARE Program](#): If you are concerned about the welfare of someone affiliated with MSU and this is a non-emergency, you can complete a CARE Referral. Sometimes people cannot or will not ask for support, so informing us of your concern may be a critical factor in getting them support they need. Note: If someone is at imminent risk of harming themselves or others, or if you perceive the situation to be an emergency, please contact 911 immediately.
- [Disability Services](#): Our purpose is to provide access to all college programs, services, activities and facilities for students with disabilities.
- **The VOICE Center** offers free and confidential services and information for all people impacted by sexual assault, relationship violence, stalking, and harassment; including friends, family, and loved ones of survivors. **VOICE Center 24-hour Confidential Support Line (406)994-7069**

Where to go and who to contact

The Graduate School

The Graduate School (GS) has policies and procedures, spanning from admission to degree completion, meant to maintain high quality academic standards throughout each graduate program. These policies and procedures are set, modified and approved by the GS and the University Graduate Council and all graduate programs must adhere to them. Stay informed by periodically checking the GS website:

<https://www.montana.edu/gradschool/>

Forms and Paperwork

All of your paperwork, including the Program of Study and your graduation paperwork, go through and are approved by the GS. It is your responsibility to be aware of what forms need to be submitted to the GS, as well as the dates and deadlines, and initiate conversation/work with your advisor to meet any deadlines for required paperwork.

Electronic Theses and Dissertations (ETD)

In addition, your written thesis or dissertation must be formatted following the Graduate School guidelines. You will work with a formatting advisor and submit the electronic thesis/dissertation for formatting approval through the GS. Your thesis is then published in ScholarWorks, the Montana State University open-access ETD repository. It is recommended to use the GS template for your thesis/dissertation and to start working with their formatting advisor as soon as is feasible. Formatting takes longer than you would expect!

Professional Development: GradCat 360

GradCat 360 is a comprehensive professional development program for graduate students at Montana State University. It is a series of programs and events designed by the Graduate School and departments across campus that center around nine focus areas. These areas are tailored to help students cultivate a unified set of skills and knowledge for educational success and professional preparation. There are a ton of great resources!

Norm Asbjornson College of Engineering (NACOE)

The NACOE website has resources for graduate students, including links to updated GS forms, policies and announcements and other miscellaneous information (the Graduate Student Ambassadors organization, IT support, NACOE logos and powerpoint templates, etc).

<https://coe.montana.edu/grad/resources.html>

In the Dean's office, graduate student affairs are handled by the Associate Dean of Research, Economic Development and Graduate Education. The Associate Dean is a resource you can go to if your advisor, the CHBE Graduate Program Coordinator or the CHBE Department Head are unavailable or unable to answer your question or meet your need/address your concern.

The NACOE Graduate Student Ambassadors

The Graduate Student Ambassadors answer questions for prospective students, are a voice for NACOE graduate students and organize events. If you are interested in joining the ambassadors, contact the CHBE Graduate Program Coordinator or the NACOE Associate Dean of Research, Economic Development and Graduate Education.

<https://coe.montana.edu/grad/ambassadors.html>

Other Graduate Student organizations on campus include:

Society of American Indian Graduate Students – Montana State University ([SAIGS](#))

Graduate Women in Science and Engineering ([WISE](#))

More student organizations can be found with the [Office of Student Engagement](#).

The Chemical and Biological Engineering Department

The CHBE department's graduate program website is: <https://chbe.montana.edu/grad/>

For questions or concerns, you can contact the CHBE Graduate Program Coordinator. If they are unavailable or unable to provide an answer, you can also contact the CHBE Department Head. If you do not have a research advisor, the Graduate Program Coordinator can help advise you on coursework and path to degree.

Other MSU Resources

The Writing Center

The Writing Center is a resource providing writing support to any MSU student, including graduate students. Services range from one-on-one writing tutor appointments, to writing retreats and interdisciplinary writing groups.

<https://www.montana.edu/writingcenter/>

Center for Faculty Excellence

The Center for Faculty Excellence (CFE) develops and provides experiences, opportunities, and resources that support the growth of faculty in achieving excellence in teaching, research/scholarship, and service. While CFE workshops are generally targeted to faculty, they are also open to graduate students. CFE workshops are an opportunity for future faculty and graduate teaching assistants to obtain professional development around teaching. They also offer workshops around initiating and maintaining an independent research program.

<https://www.montana.edu/facultyexcellence/>

The Graduate Employee Organization

The Graduate Employee Organization (GEO) is the union that represents Teaching and Research Assistants across the MSU campus. The GEO is an organization run by graduate employees with the goal of improving the experience of graduate employees. As a recognized union, they have the legal right to negotiate a contract with MSU as the employer.

Financial Support

The CHBE department and CHBE faculty research advisors strive to provide financial support for all Ph.D. and thesis-option (Plan A) M.S. students throughout the course of their studies and also to provide stipends that are on par or above the average stipend within the NACOE. Ph.D. and thesis-option (Plan A) M.S. students will be employed primarily through a graduate teaching assistantship (GTA) or graduate research assistantship (GRA). Per Graduate School policy, graduate students may also work as a student employee at Residence Life, University Food Services, ASMSU tutoring, etc. Twenty (20) hours is the maximum total hours per week graduate students can work on campus (<https://www.montana.edu/gradschool/policy/appointments.html>). However, the CHBE encourages all GTA and GRA funded students to limit employment outside of their graduate work so as to make satisfactory and timely progress towards their degrees.

The Master of Engineering (MENG) programs are self-funded coursework only programs and students are generally not eligible for departmental funding. Non-thesis option (Plan B) M.S. degrees are also typically not eligible for department funding.

Graduate Research Assistantships (GRA)

Research assistantships provide financial support to graduate students who work on funded research projects. The funding for GRA's comes directly from grants obtained by faculty members through a competitive proposal process and is therefore available only for specific projects. A GRA generally pays a stipend as well as tuition and fees. The stipend amount will depend upon the funding source, but faculty must meet or exceed the department's minimum.

Individual faculty members choose graduate students to receive GRA support based on the needs of the project and the interests and capabilities of the student. The sponsoring faculty member typically serves as the research advisor and committee chair for the supported student.

The NACOE does offer a Benjamin Fellowship that provides a stipend and tuition and fee waivers for the first year of PhD study. Students are automatically considered for the Benjamin Fellowship during the review of their graduate school application and offering of the Fellowship typically occurs when admission to the CHBE Ph.D. program is granted.

Graduate Teaching Assistantships (GTA)

Graduate teaching assistantships provide a stipend and tuition and fee waivers for graduate students serving as teaching assistants for CHBE department courses. GTA position offers are made by the department and availability changes every semester depending upon funding and number of courses requiring TA support. There are several reasons why a graduate student may work as a GTA during their graduate work:

- New incoming Ph.D. or thesis-option M.S. students without a research project and advisor identified may be funded on a GTA temporarily as they search for a project. A student isn't guaranteed GTA funding for their entire degree, rather it is temporary funding (~ one year) until they find an advisor who will provide GRA funding.

- A current Ph.D. or thesis-option M.S. student whose faculty advisor does not have GRA funding available may receive GTA funding. Note that many standard federally funded grants (NSF, NIH, etc) are for three years, while a typical Ph.D. (straight to the Ph.D. track from undergraduate) may take up to or more than ~5 years. To cover any gaps in funding, a faculty advisor may make a request to the department that their student receive a GTA position. This often occurs in the first year or the last 1-2 years of study for a Ph.D. student.
Note: Ph.D. students in their last semester may also apply for the Graduate School's Ph.D. Dissertation Completion Award, which is a one semester GRA that includes a stipend and tuition waivers (fees not covered).

Workload expectations for GTA positions

A GTA will work with a faculty member in their course to support overall instructional effort for no more than 19 hours per week. At times a GTA may be assigned to two courses at half time for each. Typical types of responsibilities would include: grading homework, projects, quizzes and exams; proctoring exams; supervising laboratory sections and associated preparation and grading; holding office hours; teaching recitations; leading problem solving help sessions for students; and on some occasions lecturing. Note that a GTA will not necessarily be performing all these duties. The exact responsibilities will depend upon instructor and course needs. Once the GTA gets a course assignment(s) from the department, they should contact the course instructor(s) to discuss what types of support is needed.

Fellowships

A Fellowship provides financial support to graduate students without a corresponding obligation for teaching or a separately funded research assistantship. Fellowships are generally merit-based awards granted by internal or external sponsoring organizations to full-time students or perspective students who are engaged in or entering a graduate program of study. Many government and private organizations offer applications for fellowship support for graduate students. One prestigious example is the U.S. National Science Foundation Graduate Research Fellowship (NSF GRFP) program. For help in identifying potential fellowships to apply for, consult with your research advisor, the department graduate program coordinator, the college's associate dean for graduate education and/or the Graduate School.

Health Insurance

University health insurance is not offered as a benefit. Instead there is an additional payment included with your academic year appointments (on top of your stipend) that is intended to defray costs including, but not limited to, living and healthcare costs. You can choose to use the allocation to select into the university health insurance (the full cost will not be covered by the allocation) or purchase health insurance through the open market. Note that the Graduate Employee Organization is a labor union that negotiated a collective bargaining agreement (CBA) with MSU around such issues as benefits and compensation, including the required dollar amount of this additional allocation:

<https://www.msugeo.org/>

The Graduate School's website offers guidance on healthcare options:

https://www.montana.edu/gradschool/wellbeing/healthcare_options.html

Degree Requirements

Academic Standards

Graduate students must maintain a cumulative 3.0 GPA in their graduate courses listed on their graduate Program of Study (see below) in order to retain graduate standing. Only grades of C- or better will be counted toward the plan of study. Grades lower than C- mean the course must be repeated. If a student's GPA drops below a 3.0, the student may be placed on probation. If a GPA is below 3.0 for more than a semester, the student may be placed on suspension. For further detail, see the Graduate School policies:

<https://www.montana.edu/gradschool/policy/index.html>

If you are concerned about your performance in a course and a potential drop in GPA, you should speak with their advisor as soon as possible. Students may lose financial support if their academic or GRA performance is deemed unsatisfactory by their advisor or if their GTA duties are deemed unsatisfactory by the supervising faculty.

Program of Study and Committees

Once Ph.D. and thesis-option M.S. students have identified a faculty advisor and research project, they will need to form their graduate committee. The committee advises the student on academic matters and is the examining committee for the student's comprehensive and thesis/dissertation defenses. The student's research advisor typically serves as the committee chair. If the student's research advisor is outside the CHBE department, the student must have a co-chair from within the CHBE department. Co-chairs are encouraged in general. The rest of the committee should have relevant expertise to provide guidance and advice on the student's scholarship and may be inter-disciplinary. The student should consult with their advisor when forming their committee.

For M.S. students, the committee should have a minimum of three (3) members with the majority being from the CHBE department. The committee chair should be a tenured or tenure-track faculty member. It is not required that the committee chair be faculty within the CHBE department. However, in the case that the primary research advisor is from outside the department, there must be a tenure track faculty co-chair from within the department. Non tenure track committee members must submit a letter of recommendation from the department head to the Graduate School. It is recommended that non-tenure track committee members represent a minority of the committee.

For Ph.D. students, the committee should have a minimum of four (4) members with at least two being from the CHBE department. The committee chair should be a tenured or tenure-track faculty member. It is not required that the committee chair be faculty within the CHBE department. However, in the case that the primary research advisor is from outside the department, there must be a tenure track faculty co-chair from within the department. Non tenure track committee members must submit a letter of recommendation from the department head to the Graduate School. It is recommended that non-tenure track committee members represent a minority of the committee.

The student also needs to construct a Program of Study. The program of study defines the minimum requirements for the degree, essentially it lists all required coursework and maps out when the credits will be taken. Students construct their own program of study based on the degree requirements with input from their advisor and graduate committee.

A Program of Study and Committee form needs to be submitted to the Graduate School within the student's third semester of attendance for Ph.D. students and within the second semester of attendance for M.S. students. See the Graduate School website for the most up to date information.

Qualifying Exams, Comprehensive Exams and Defense

All Ph.D. students must take a qualifying exam. All Ph.D. and M.S. students are required to take a comprehensive exam, although for a thesis-option (Plan A) M.S. student, the comprehensive exam is combined with the thesis defense. All Plan A M.S. students must have a thesis defense and all Ph.D. students must have a dissertation defense. Non-thesis (Plan B) M.S. students must develop a professional paper under the supervision of a faculty advisor and they typically present the results of their final project in a seminar. Note that the MENG degrees are coursework only degrees and no additional examinations are required.

Qualifying Exam

Ph.D. students are expected to complete the qualifying exam within two semesters of matriculation into the Ph.D. program. The exam is administered yearly on the second Tuesday in February of the Spring semester. It is your responsibility to confirm with your faculty advisor when you are taking the qualifying exam and also to notify the department graduate program coordinator that you will be taking the exam.

- If your undergraduate degree is in chemical engineering or a closely related field (biological engineering, mechanical engineering, etc): you will take the qualifying exam in February of your first year.
- If your undergraduate degree is in a non-engineering field, you will take your qualifying exam in February of your second year.

If you are not sure whether your undergraduate degree is considered "closely-related" you should talk to your advisor and/or the graduate program coordinator.

The purpose of the qualifying exam is to assess your knowledge of undergraduate Chemical Engineering topics; including mass and energy balances, thermodynamics, separations (mass transfer), heat (energy) transfer, fluid mechanics, transport phenomena and chemical reaction engineering.

Qualifying Exam Format

The qualifying exam is a 5-hour written exam with an open book, open notes format. Students will receive 7 problems, one in each Chemical Engineering topic area. Of the 7 problems, students will choose 4 problems to complete. Each question will be graded by the faculty member that submitted the question. Students will not be given the test back in order to protect the questions from dissemination. The results will be analyzed by a committee composed of all CHBE faculty and a grade of Pass (P), Fail (F) or Remediate (R) will be given to each candidate. In cases where remediation in certain topic areas is required, the Ph.D. adviser, and possibly the faculty member who graded the question, will develop a remediation plan with the PhD candidate. Remediation could be problem-based or the candidate may serve as a GTA for a course in the topic area. The remediation must occur within two semesters of the qualifying exam and will be approved by the PhD. adviser.

Tips

To prepare for the exam: as this is an open book, open note format, gathering and organizing textbooks and notes is important. Since the topic areas are so broad, the best approach is to make sure you have

reference materials for each topic area and that you familiarize yourself with your materials enough to be able to find information easily. You can't study for everything, but if you can identify the type of problem and your materials are organized, you will be able to look up the topic. The exam assumes ~1 hour per topic area, so time is built in for finding the relevant information in your material.

During the exam: since you're able to choose which topics you decide to complete, we'd recommend that you scan over all the problems, carefully consider which concepts are being addressed in the problems and then choose ones you think you'll be able to complete. The indexes of your textbooks are useful tools. Keep an eye on time, if you find you're investing too much time in a single problem and it doesn't seem likely you'll complete it, move on to another problem.

Comprehensive Exam

For Ph.D. students, a comprehensive examination is to be taken within two years of the qualifying examination and after completing at least two-thirds of their total coursework. The exact timing and scheduling of your comprehensive exam should be decided on in collaboration with your faculty advisor and committee. It is your responsibility to broach the subject of the exam with your advisor and discuss with them when you should consider scheduling it.

The purpose of the comprehensive exam is twofold – it is a means of assessing your understanding of graduate level chemical engineering concepts, especially those related to your research topic, and is also a tool for you and your advisor/committee to evaluate progress and map out a path to completion of your Ph.D.

Comprehensive Exam Format

A written exam on graduate level thermodynamics, transport phenomena, mathematical methods, and kinetics and reactor engineering will only be required of graduate students who have a GPA in graduate coursework of less than 3.5. Otherwise, the comprehensive exam consists of a written research proposal (typically NSF style) and a public oral seminar followed by a closed-session oral examination by the student's Ph.D. committee.

Unless otherwise arranged by the committee, the proposal should be in compliance with the current year's NSF Proposal & Award Policies and Procedures Guide (PAPPG) at www.nsf.gov. Note that the required ENGR 650 course should be taken the semester prior to scheduling the comprehensive exam. The course is designed to help you prepare your proposal. The public oral seminar should be ~40 minutes plus 10 minutes of public questions and should cover your research to date and the proposed research that will be done to complete your Ph.D. The public seminar will be followed by a closed-session oral examination of 45-90 minutes by your Ph.D. committee.

NOTE: if you do not already have an M.S. degree, you can file paperwork to get a Plan B M.S. "enroute to your Ph.D.", i.e. at the same time as you pass your comprehensive exam. The Plan B M.S. requires a professional paper and so students would need to enroll in ECHM/EBIO 575 and provide some sort of professional paper, typically this would be a draft manuscript or the comprehensive proposal. The comprehensive exam public seminar and closed-door examination serve as the presentation and defense for the M.S. In addition, the GS would require a program of study form to be filed for the Plan B M.S. If you plan to file for the Plan B M.S. enroute to Ph.D., you will need to plan ahead. See the graduate school website and speak with your advisor or the graduate program coordinator for more information at least a semester before your comprehensive is scheduled.

Defense

Your defense is a final oral examination and defense of a dissertation or thesis based on your research. The defense is the culmination of your graduate work. It will consist of a ~40 public seminar with ~10 minutes of public questions and will be followed by a closed-session 45-90 minute oral examination by your committee. The seminar should present the main findings of your research.

Roles and Responsibilities of Faculty Advisors and Graduate Students

Faculty Advisor Responsibilities

Faculty members who mentor graduate students have an obligation to provide students with the support they need to be successful. These responsibilities include:

- Providing guidance on the specific requirements for achieving the chosen degree, including advice on courses for the program of study, selection of appropriate research topics, evaluation of research progress, and expectations on the amount of time spent on research.
- Arranging with the student and maintaining a mutually agreeable schedule to discuss coursework and research progress. The advisor should then be available during these times to meet with the student.
- Ensuring that the objectives related to the student's program of study and research are attainable if the student exhibits due diligence. The typical M.S. Plan A student should expect to graduate within seven semesters (including summer semester), and a Plan B student within six semesters (including summer semester). A Ph.D. student with an M.S. degree in an engineering discipline can expect to graduate within 8 semesters (4 years). A Ph.D. student with a B.S. degree will typically take 5 years to graduate. Individual time-to-degree goals may vary due to the nature of research. Hence, the time spans noted here should serve as a guideline under which the major professor and the student can work together toward timely completion of the degree requirements.
- Participating in regular committee meetings to ensure that the student is obtaining appropriate guidance and making progress towards the degree.
- Informing the graduate student if extramural funding for the student's research project is in jeopardy.
- If at all possible, providing the student with professional development opportunities including attending conferences, participating in workshops, obtaining teaching experience, etc.
- Faculty are strongly encouraged to have annual reviews with graduate students.
- Additional information is available at the Graduate School website at https://www.montana.edu/gradschool/policy/degreq_doctoral.html

Graduate Student Responsibilities

Students are expected to apply due diligence toward completion of their degree. This includes progress on research projects (Plan A M.S. students and Ph.D. students) in addition to coursework.

- A student with a research assistantship is expected to spend 20 hours per week on project work and 20 hours per week on courses and his/her thesis/dissertation. In most cases, the project work will be the same as that used for the thesis/dissertation, but there is no requirement that this be the case. The typical student will likely need to spend more time than described above doing work relevant to their thesis or dissertation to ensure that they will graduate in a timely manner. Students who are supported with a research assistantship should work approximately half time on their research when taking courses, and full time when only thesis/dissertation credits are taken and during the summers. Students should discuss time expectations with their advisor.

- Graduate students are responsible for ensuring that their advisors and graduate committee members are kept up to date with their progress.
 - Students should schedule a meeting with their entire committee at least annually.
 - Ph.D. students must schedule their formal examinations and ensure that their entire committee is present.
 - The student should also ensure that they are meeting all departmental, programmatic, and GS requirements for the degree. This includes coursework, scheduling of the required examinations, and completion of the thesis or dissertation by the required dates. Students are also expected to participate in required seminars.
- The collected data and products of analysis of research projects is the property of Montana State University and will be stored in accordance with university regulations. If students are funded on a GRA through federal sources, the collected data and products of analysis from such research projects are also the property of the US Government. Students are obligated to provide their advisor with laboratory notebooks, computer files, and other materials as requested. This is a requirement of funding agencies, and MSU is held accountable for data from funded projects.
- Publication of research results is an expectation of graduate school.
 - It is in the best interest of students to complete drafts of manuscripts for publication prior to completion of their degree. If this is not possible, the student should discuss with the advisor the timeframe in which the first draft of the manuscript should be completed.
 - Authorship and author order should be discussed with the faculty advisor. To be listed as an author, a person must have made a direct, substantial academic contribution to at least two of the four main components of a typical scientific project or paper: (i) conception or design, (ii) data collection and processing, (iii) analysis and interpretation of data, (iv) writing sections of the paper. Anyone listed as an author should critically review successive drafts of the paper and approve the final version. Anyone listed as author should be able to defend the paper as a whole (although not necessarily all the technical details).
- If conflicts or issues arise with lab groups members, advisors or committee members, students should first try to resolve these issues at the advisor level. If this is unsuccessful or the student feels uncomfortable speaking to their advisor about the issue, students can consult the graduate program coordinator and/or department head. Students may also confer with the NACOE Associate Dean for Research and Graduate Studies about any issues of concern. Some problems may be referred to the Graduate School for final resolution. In addition, the student may request that an independent Graduate Representative be added to their committee. The primary responsibility of the Graduate Representative is to ensure that examinations and defenses are conducted in a fair and satisfactory manner. The Graduate Representative will attend all examinations and defenses but is not directly involved in the student's research. Contact the Graduate School for assistance in adding a Graduate Representative to your committee.

Ethics and Integrity in Graduate School

Graduate students are expected to hold the highest standards of academic honesty. All graduate students must conform to the MSU Student Conduct Code, and if violated, are subject to the sanctions outlined therein. All students should be familiar with the MSU Student Conduct Guidelines. The published definition of academic misconduct includes the following items of particular significance to graduate students: cheating; plagiarism; falsification; multiple submissions; unauthorized access to, manipulation of or tampering with laboratory equipment, experiments, computer programs without proper authorization; and misuse of research data in reporting results.

Some general guidelines include:

- You are responsible for doing your own work, both in courses and research. Follow collaboration guidelines outlined by course instructors and follow expectations for ethical practices in research. You should speak with your instructor or advisor if you are unsure of the expectations.
- You must accurately and honestly document any sources of information used in your dissertation and manuscripts. This includes proper documentation of experimental procedures, data collection, data analysis, etc. All external sources of information (books, journal articles, websites, graphics/images, etc.) should be properly referenced. Any questions about documentation should be discussed with your research advisor.
- Gain proper authorization before using any departmental equipment or facilities.

Timeline

The following is a very basic outline of the order of events and timing for a typical Ph.D. student. See the relevant sections of the handbook for full details and the Graduate School's website for up-to-date forms, deadlines and requirements.

- Coursework may be started immediately in the semester you are admitted.
- If a research advisor has not been identified upon admittance, one should be found within the first year.
- Ph.D. students are expected to complete the qualifying exam in the first February after admittance. If your undergraduate degree is not in chemical engineering or a closely related field, then you will wait a year. It is recommended in that year to take classes in chemical engineering subject areas where you are most likely to have gaps in your background. Work with your advisor and/or the program coordinator to identify these courses.
- By the end of your second semester, form your committee and submit your Program of Study.
- Within two years of the qualifying exam and after completing ~2/3 of your coursework, schedule your comprehensive exam. EGEN 650 (offered in spring semesters) should be completed prior to or in the same semester as the comprehensive exam is scheduled. If you want to get an M.S. enroute to your Ph.D. at the same time as passing your comprehensive, you will need to plan in advance, complete the required paperwork and enroll in ECHM 575 during the semester in which your comprehensive exam is held.
- In the term you intend to graduate:
 - You must be enrolled in at least 3 credits.
 - Submit the appropriate form for application for graduation to the Graduate School by the GS's required deadline.
 - Schedule the dissertation defense.
 - Contact your committee early to find a common available time for your defense. You will need to find a window of time of up to 2.5 hours where your entire committee is available.
 - Supply your committee with your completed dissertation at least two weeks (10 business days) before the scheduled defense. It is also never too early to begin working with the GS formatting advisor.
 - Schedule your defense far enough in advance of the GS deadline that you have time to make any edits to your dissertation required by committee members.

- Officially submit your dissertation to the GS.
- If you apply for graduation and then realize you need some additional time, you may apply for a one credit extension through the GS. All degree requirements must be met by 5:00pm on the first day of the following term for the one-credit extension. Note that the transition from spring to summer semester happens the Monday after spring finals week concludes.