

GRADUATE PROGRAM HANDBOOK OF REQUIREMENTS & POLICIES

Academic Year 2019 – 2020

TABLE OF CONTENTS

WELCOME	1
INTRODUCTION	2
STUDENT HONOR & CONDUCT CODE	2
Academic Honesty and Ethical Conduct in Research.....	3
Professional Conduct in the Department	4
Reporting Misconduct.....	5
DEPARTMENT STRUCTURE & PERSONNEL	6
Key Personnel	6
Chemical Engineering Faculty.....	6
Graduate Faculty	6
Department Chair	6
Associate Chair for Graduate Studies	6
Master’s Program Coordinator.....	7
Graduate Program Committee.....	7
Graduate Academic Adviser	7
Ph.D. Recruitment Coordinator.....	7
Graduate Admissions Assistant	7
Graduate Admissions Committee	7
Research Adviser	7
Faculty Academic Adviser.....	7
Supervisory Committee.....	8
GRaduate Association of Chemical Engineers (GRACE).....	8
QUICK REFERENCE GUIDELINES	9
Doctoral Program.....	9
Master of Science Program	12
Master of Engineering Program	14
GETTING STARTED	16
Graduate Student Expectations	16
First Semester.....	16
Departmental Access & Resources	18
Computer Accounts and Facilities.....	18
Office Space, Keys, and Card Access	18
Student Mailboxes	18
Room Reservations.....	18
RESEARCH	19
Choose a Research Adviser.....	19
Laboratory Safety.....	20
DOCTORAL PROGRAM REQUIREMENTS	21
Program Schedule	21
Training Requirements.....	21
Doctoral Required Coursework.....	22
Research Courses	22
Graduate Seminar Course	22
Supervised Teaching Course.....	22

Progress Reports	23
Research Seminar Requirement	23
Time Requirements	24
Candidacy Examination	24
Research Proposal.....	25
Oral Qualifying Examination	26
Assessment of the Candidacy Examination.....	26
Doctoral Final Examination	27
MASTER OF SCIENCE PROGRAM REQUIREMENTS	27
Program Schedule	27
Training Requirements.....	28
M.S. Required Coursework.....	28
Research and Individual Work Courses.....	28
M.S. Course Restrictions and Classifications	28
M.S. Final Examination	28
MASTER OF ENGINEERING PROGRAM REQUIREMENTS	29
Program Schedule	29
Undergraduate Coursework	29
Training Requirements.....	29
M.E. Required Coursework.....	30
Research and Individual Work Courses.....	30
M.E. Course Restrictions and Classifications	30
M.E. Final Examination	30
FINAL EXAMINATION.....	30
Doctoral Dissertation	31
Master’s Thesis	31
Master’s Report.....	31
Final Oral Defense Examination.....	32
Assessment of the Final Examination.....	33
Leaving Before Completion of Final Examination.....	33
REGISTRATION & COURSEWORK.....	34
Requirements	34
Registration Process	34
Course Credit	34
Course Descriptions	35
Core Chemical Engineering Courses.....	35
Chemical Engineering Electives.....	35
Other Approved Chemical Engineering Courses	36
Course Grades and Grade Point Average (GPA).....	36
Add/Drop Courses.....	36
Retaking Courses	37
Transfer of Credits from Other Institutions	37
Florida State Residency	37
OTHER DEGREE OPTIONS	37
Concurrent Degree	37
Minor Degree	38

Certificate Programs.....	38
LEAVE POLICY	38
Leave of Absence.....	38
Personal Time	38
CHANGES TO YOUR DEGREE PROGRAM	39
Petitions.....	39
Change from Ph.D. to M.S. Degree Plan	39
Change or Continuation from M.S. to Ph.D. Degree Plan.....	39
Change from Non-Thesis to Thesis Degree Plan.....	40
Change from Thesis to Non-Thesis Degree Plan.....	40
Continuation from M.E. to Ph.D. Degree Plan	40
Change Research Adviser	40
Master’s Students.....	41
Ph.D. Students	41
Transition Plan.....	41
Change Supervisory Committee Member.....	41
MAINTAINING SATISFACTORY PROGRESS	42
GRADUATE STUDENT WELLNESS SERVICES	43
INTERNSHIPS.....	44
FINAL TERM	44
Clear Prior	45

WELCOME

We are thrilled that you have decided to join the Chemical Engineering Graduate Program at the University of Florida. Our department has a long history of excellence in research and education, and has had an impact in the formation of many professional and intellectual leaders in the chemical engineering profession. Graduate students will have the opportunity to work closely with our dynamic, internationally-recognized faculty in both the classroom and laboratory. Chemical engineering faculty and students benefit from state-of-the-art instrumentation housed in service centers throughout campus and close collaborations with other engineering disciplines, as well as with faculty and students from the College of Medicine, College of Dentistry, the College of Liberal Arts and Life Sciences, and the Institute of Food and Agricultural Sciences. Partnerships with international collaborators and institutions also enrich the educational and research experiences of our students. The quality of our programs, faculty, and students is recognized nationally, and we are consistently among the top 10 producers nationally of both undergraduate and graduate chemical engineers. Chemical engineering offers a vibrant environment supportive of advanced study and research, and the University of Florida is a comprehensive university ranked among the nation's top-10 public universities in the latest U.S. News & World Report Best College rankings.

Our graduate program includes Master of Science (M.S.), Master of Engineering (M.E.), and Doctor of Philosophy (Ph.D.) degrees in Chemical Engineering. We have an exciting graduate program that encompasses a broad range of educational opportunities and activities. The course requirements are kept to a minimum so that students have freedom in developing their own programs of study. Graduate students will learn to develop creative solutions to challenging and intellectually-stimulating problems while enhancing their technical and problem solving skills as they learn how to apply the scientific method to many engineering problems.

INTRODUCTION

This Handbook contains supplementary information to the [Graduate Catalog](#), which is the primary document governing all academic programs at the University of Florida. Although every effort has been made to maintain accuracy, the Department of Chemical Engineering reserves the right to correct errors when found without further notice to students. The presence of errors will not affect the application of the rules and requirements applicable to all students. The set of policies described in this Handbook are established to ensure that all students are provided the opportunity to achieve a satisfactory level of competency required for a graduate degree in chemical engineering. Students may consult with the [Graduate Academic Adviser](#) or [Associate Chair for Graduate Studies](#) for any questions related to this Handbook.

Graduate students are regulated by the rules set forth in the [Graduate Catalog](#) and Handbook published in the academic year of the student's first term. Students transitioning from a Master's to Doctoral program must follow the catalog year in effect when they begin the Doctoral program. It is the responsibility of the student to be familiar with both publications and to know and take appropriate steps to meet all program requirements before graduation. **Rules are not waived for ignorance.**

STUDENT HONOR & CONDUCT CODE

The University of Florida strives to protect and to guide the educational community by establishing a Student Honor Code, a Student Conduct Code, and a Student conduct system. These codes and systems promote individual and social responsibility and are enforced through University Regulations. By becoming a member of the University of Florida community, a Student agrees to adhere to its Student Honor Code and its Student Conduct Code. Students acting as individuals or as members of Student Organizations are expected to follow all applicable Laws and Regulations. University Regulations have been designed to promote the safety of people and the campus community, to create an environment conducive to learning, and to achieve the mission of the Institution.

The University principles address our respect for people and property, for fairness, for Laws and Regulations, and for academic integrity. No policy or regulation shall be interpreted to limit the constitutional or statutory rights of any student, including but not limited to expressive rights protected by the First Amendment.

1. *Respect for people and property.* Students are encouraged both to conduct themselves in a manner that exemplifies respect for all people and property and to adhere to their personal values without imposing those on others.
2. *Respect for fairness.* Rules and established procedures are intended to ensure both fundamental fairness and an educational experience for students and Student Organizations.
3. *Respect for Laws and Regulations.* Students and Student Organizations are expected to follow all applicable Laws and Regulations.
4. *Respect for academic integrity.* Academic honesty and integrity are fundamental values of the University. Students commit to holding themselves and their peers to the high standard of honor required by the Student Honor Code. Any student who becomes aware of a violation of the Student Honor Code is encouraged to report the violation to the appropriate University Official.

The University has established procedures within the Dean of Students Office on how to handle possible Student Honor Code violations (<https://sccr.dso.ufl.edu/process/student-honor-code/>) and Conduct Code violations (<https://sccr.dso.ufl.edu/process/student-conduct-code/>). Detailed descriptions of the University Student Honor & Student Conduct codes as well as students' rights are found at:

<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.

Academic Honesty and Ethical Conduct in Research

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. Students are expected to produce their own work in homework, projects, and exams (including the [Candidacy Examination](#) and [Final Examination](#)). Unauthorized collaboration in take-home exams, projects, and individual assignments is a serious violation of the [University Honor Code](#) and could lead to a grade decrease, course failure, and loss of degree status. The Honor Code specifies a number of behaviors in detail that are in violation of this code and the possible sanctions. Furthermore, **graduate students are obligated to report any condition that facilitates academic misconduct to appropriate personnel.**

Graduate students are expected to maintain high ethical standards in the conduct and reporting of scientific and scholarly research, including identification of potential conflicts of interest to responsible authorship and publication. All students enrolled in Research Courses or funded by NSF, NIH, or USDA awards must complete the general [Responsible Conduct in Research \(RCR\) training](#). Regardless, all graduate students are responsible for ethical research conduct to the University, to the academic community, to those sponsoring the research, and to the community at large. Research Misconduct, including fabrication or falsification of data, and plagiarism in proposing, performing, reviewing, or reporting of results, is a most serious offense that can greatly damage the welfare and reputation of the students, faculty, and the University. See <https://research.ufl.edu/compliance/research-integrity.html> for more information regarding Research Misconduct.

From the University of Florida Student Handbook: “**Plagiarism is not tolerated at the University of Florida. Plagiarism in a [Master’s Thesis](#) or [Doctoral Dissertation](#) is punishable by expulsion. If the plagiarism is detected after the degree has been awarded, the degree may be rescinded.**” Likewise, the Candidacy Examination is subject to the same policy. For a thorough discussion of plagiarism and the applicable laws, see “Plagiarism in Colleges in the USA: legal aspects of plagiarism, academic policy” by Ronald B. Standler (manuscript is available at www.rbs2.com/plag.htm). Briefly, a student shall not represent all or any portion of the work of another as the student’s own work. Plagiarism includes (but is not limited to):

1. Quoting oral or written materials, whether published or unpublished, without proper attribution.
2. Submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authored by the student.

Plagiarism is probably understood as stealing someone else's words as your own. In fact, there are many different kinds of plagiarism. The top 5 types are:

1. Stealing verbatim,
2. Misquoting,
3. Paraphrasing without quoting,
4. Summarizing without quoting, and
5. Duplicating publication.

If graduate students have any questions or concerns regarding Research Misconduct and Plagiarism, they are encouraged to discuss them with their [Research Adviser](#), [Supervisory Committee](#), or the [Associate Chair for Graduate Studies](#).

Professional Conduct in the Department

The Department of Chemical Engineering takes very seriously its commitment to providing a safe and healthy work environment, free from bullying or harassment. We value broad diversity within our community and are committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that all students will treat faculty, staff, and other students with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

Although bullying and harassment often include similar behaviors, harassment is a form of discrimination, i.e., negative behavior based on any legally protected characteristic (e.g., race, color, religion, sex, etc.). Both bullying and harassment are harmful not only to the target of the behavior but also damages the Department and University's culture and reputation. It is unacceptable and the Department of Chemical Engineering will not tolerate *in any instance* bullying or harassing behavior.

Everyone has a legal, as well as moral responsibility, to prevent bullying and harassment from occurring. The purpose of this policy is to communicate that the Department of Chemical Engineering expects all students, staff, and faculty to maintain professional conduct at all times. If anyone breaches this policy, they may be subject to disciplinary action. In serious cases, this may include termination of employment. If a person makes a false complaint, or a complaint in bad faith (e.g., making up a complaint to get someone else in trouble, or making a complaint where there is no foundation for the complaint), that person may be disciplined and/or have their employment terminated.

Bullying is *repeated and unreasonable behavior* directed towards a person or persons that creates a risk to health and safety. A single incident of unreasonable behavior does not usually constitute bullying. However, it should not be ignored as it may have the potential to escalate into bullying behavior. Bullying includes both physical and psychological risks and abuse that may include (i) threatening, humiliating, or intimidating behaviors; (ii) work interference/sabotage that prevents work from getting done; or (iii) verbal abuse.

Bullying conduct can take many different forms that include the obvious to the subtler:

- Repeated personal insults or hurtful remarks or attacks about a person;
- Unwanted physical contact, physical abuse, or threats of abuse to an individual or an individual's property (defacing or marking up property);
- Attacking or threatening with equipment, knives, guns, clubs or any other type of object that can be turned into a weapon;
- Using obscene or intimidating gestures;
- Persistent singling out of an individual or spreading rumors and gossip regarding an individual;
- Inhibiting an individual from expressing themselves;
- Deliberately excluding an individual or isolating them from work-related or school-related activities, such as meetings or office hours;
- Manipulating the ability of someone to conduct their work (e.g., overloading, underloading, withholding information, assigning menial tasks, or deliberate changing of work hours or schedule to make it difficult); and
- Psychological harassment, including intimidation, mind games, or hazing.

The above examples do not represent a complete list of bullying behaviors. They are indicative of the type of behaviors that may constitute bullying that are unacceptable. A person's intention is irrelevant when determining if bullying has occurred. Bullying can occur unintentionally, where actions which are not intended to victimize, humiliate, undermine, or threaten a person actually have that effect.

Harassment includes all of the conduct described above for bullying but is directed to an individual based on their family, sex, sexuality, gender identity, race or culture, age, religion, national origin, education or

economic background, or any other legally protected characteristic. Harassing behavior can include verbal, nonverbal, or physical conduct. Sexual harassment is behavior of a sexual nature that is unwelcome and offensive to the person or persons it is targeted toward. Examples of sexually harassing behavior may include:

- Unwelcome physical contact, such as touching, massaging, patting, pinching, stroking, or kissing;
- Stalking, intimidating, coercing, or threatening another person;
- Giving gifts of a personal and intimate nature;
- Foul language, jokes, or innuendo of an offensive sexual nature;
- Sexually explicit comments, conversations, propositions, or requests;
- Seeking emotional involvement for your benefit;
- Obscene gestures of a sexual nature; and
- Displays of sexually explicit pictures, drawings, or caricatures.

Reporting Misconduct

The University of Florida is committed to a policy of treating all members of the university community fairly in regard to their personal and professional concerns. The University believes strongly in the ability of students to express concerns regarding their experiences at the University. A formal grievance procedure exists to ensure each graduate student is given adequate opportunity to bring complaints and problems, exclusive of grades, to the attention of the University Administration with the assurance each concern be given fair consideration.

A grievance is defined as dissatisfaction occurring when a student thinks that any condition affecting him or her is unjust or inequitable or creates an unnecessary hardship. Areas in which student grievances may arise include scientific misconduct, sexual harassment, discrimination, employment-related concerns, and academic matters.

The University of Florida regulations provide a procedure for filing a formal grievance in [Regulation 4.012](#). Prior to invoking a formal written grievance, the student is encouraged to discuss his or her grievance with the [Associate Chair for Graduate Studies](#) to discuss the appropriate course of action. If the grievance is against the Associate Chair for Graduate Studies, then the [Department Chair](#) should be contacted. Students may also contact the Herbert Wertheim College of Engineering (HWCOE) Associate Dean for Student Affairs, the University Ombuds or Dean of Students Offices. For complaints not satisfactorily resolved at the department level or which seem to be broader than one department, students are encouraged to submit those complaints to either the University Ombuds or Dean of Students Office.

Anyone who believes that he or she has been subjected to bullying or harassment is strongly encouraged to promptly report such behavior to any university official, administrator, supervisor, manager, [Department Chair](#), [Associate Chair for Graduate Studies](#), [Research Adviser](#) or faculty member. If violence, assault, or stalking has occurred during the incident, you should contact the Police Department immediately using 911 services for an emergency or 352-392-1111 for non-emergency situations.

Incidents should be reported as soon as possible after the time of their occurrence to allow the Department and University to take appropriate remedial action. No employee or student should assume Department or University officials know about a situation or incident. **Any university official (administrator, supervisor, or manager), faculty member, teaching assistant, or staff member with knowledge or complaint of sexual harassment (written or oral report) must promptly report it to the Title IX Coordinator (titleix@ad.ufl.edu), and may be disciplined for failing to do so.**

Students that have experienced bullying or harassing behavior are encouraged to use the following University resources to help them cope with the situation:

U Matter, We Care: umatter@ufl.edu or 352-392-1575

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc> or 352-392-1575

Sexual Assault Recovery Services (SARS): Student Health Care Center, 352-392-1161

DEPARTMENT STRUCTURE & PERSONNEL

The Department of Chemical Engineering is part of the Herbert Wertheim College of Engineering (HWCOE), one of the largest and most dynamic engineering colleges in the nation, producing leaders and problem-solvers who take a multidisciplinary approach to innovative and human-centered solutions.

Key Personnel

Department Chair	Prof. Carlos Rinaldi	CHESC 289
Associate Chair for Graduate Studies	Prof. Kirk Ziegler	CHESC 261
Master's Program Coordinator	Prof. Yiider Tseng	CHE 223
Ph.D. Recruitment Coordinator	Prof. Helena Hagelin-Weaver	CHE 323
Graduate Academic Adviser	Ms. Shirley Kelly	CHESC 263
Graduate Admissions Assistant	Ms. Debbie Sandoval	CHESC 260

Chemical Engineering Faculty

The current tenure and tenure-track faculty of the Department and their contact information are provided on our website: <https://www.che.ufl.edu/ourfaculty/>.

Graduate Faculty

The Graduate School includes Graduate Faculty members across the University that are approved to mentor graduate students completing a [Master's Thesis](#) or [Doctoral Dissertation](#).

Department Chair

The Department Chair manages the operation of the Chemical Engineering Department. The Chair is responsible for overall administration and policy directions.

Associate Chair for Graduate Studies

The Associate Chair for Graduate Studies oversees the operation of the Chemical Engineering Graduate Program. The Associate Chair for Graduate Studies is responsible for academic program administration and policy directions, ensuring policy compliance with both the [Graduate Catalog](#) and this Handbook, scheduling graduate courses, collecting data associated with SACS accreditation, coordinating the [Supervised Teaching](#) course, Orientation of incoming graduate students, and approving academic [Petitions](#). The Associate Chair for Graduate Studies serves as [Faculty Academic Adviser](#) to all admitted and present chemical engineering Ph.D. students who have not yet joined a research group or do not have a [Research Adviser](#).

Master's Program Coordinator

The Master's Program Coordinator oversees the operation of the M.S. and M.E. Graduate Program. The Master's Program Coordinator is the [Faculty Academic Adviser](#) to all non-thesis Master's students. The Master's Program Coordinator advises students on coursework, certificates, minors, and majors.

Graduate Program Committee

The Graduate Program Committee is comprised of [Chemical Engineering Faculty](#) members, including the [Master's Program Coordinator](#), and is chaired by the [Associate Chair for Graduate Studies](#). The committee is responsible for reviewing and establishing departmental policy and procedures pertaining to graduate affairs. This committee oversees formal aspects of the normal degree procedures and makes decisions on an academic [Petition](#).

Graduate Academic Adviser

The Graduate Academic Adviser assists graduate students in program deadlines, course requirements, registration, and routine administrative issues. Inquiries regarding graduate program policies and procedures should first be made to the Graduate Academic Adviser, which can then be forwarded to the [Associate Chair for Graduate Studies](#), if needed. The Graduate Academic Adviser is available to meet with any student during office hours or by appointment.

Ph.D. Recruitment Coordinator

The Ph.D. Recruitment Coordinator is responsible for coordinating all recruitment activities, including the AICHE recruitment fair and Spring Visit.

Graduate Admissions Assistant

The Graduate Admissions Assistant helps students with the application process and guides students through their matriculation into the graduate program.

Graduate Admissions Committee

The Graduate Admissions Committee is comprised of [Chemical Engineering Faculty](#) members, including the [Master's Program Coordinator](#), and is chaired by the [Ph.D. Recruitment Coordinator](#). The committee oversees admission of incoming students.

Research Adviser

Chemical Engineering students conducting [Research](#) need to have a Research Adviser. The Research Adviser has an active role in helping the student choose a research topic, develop the scientific and/or technical skills needed to conduct the research, and develop the oral and written communication skills required to present the research. The Research Adviser is responsible for ensuring that the student is aware of and understands the importance of [Academic Honesty and Ethical Conduct in Research](#) as well as [Professional Conduct in the Department](#). The Research Adviser also becomes the [Faculty Academic Adviser](#) of students conducting research for a [Master's Thesis](#) or [Doctoral Dissertation](#).

Faculty Academic Adviser

The Faculty Academic Adviser has an active role in helping the student interpret policies and achieve the requirements for the degree for which they are registered, monitor the progress towards degree

completion, define realistic goals to maintain [Satisfactory Progress](#), and prepare a career development plan. The Faculty Academic Adviser is responsible for informing the [Associate Chair for Graduate Studies](#) of any concerns about the student's progress or ability to achieve the degree for which they are registered.

Supervisory Committee

Students conducting [Research](#) for a [Master's Thesis](#) or [Doctoral Dissertation](#) must have a Supervisory Committee. The Supervisory Committee assists the graduate student in selecting coursework appropriate for the field of research, approves the [Candidacy Examination](#) for Ph.D. students, periodically reviews research Progress Reports, and approves the [Final Examination](#). The Supervisory Committee is responsible for assuring that the completed Master's Thesis or Doctoral Dissertation is original research and is a contribution to the body of knowledge. The [Research Adviser](#) and Supervisory Committee may assist the student in understanding all regulations governing the program, but the student has the ultimate responsibility for being aware of and meeting all requirements.

The Supervisory Committee is very important and should be chosen carefully. Before the end of the second semester of the degree program, students will nominate, with the advice and consent of the Research Adviser, the members of the Supervisory Committee. Typically, the Research Adviser is the Chair of the Supervisory Committee, unless they are not a primary member of the [Chemical Engineering Faculty](#). The Supervisory Committee should be communicated to the [Graduate Academic Adviser](#) as soon as chosen.

The Supervisory Committee for a Ph.D. candidate consists of at least four members selected from the [Graduate Faculty](#). At least two members must be from the Chemical Engineering Faculty. At least one member of the Supervisory Committee serves as the external member and they should be from a different educational discipline with no ties to the Chemical Engineering Department.

The Supervisory Committee for a Master's student consists of at least two members selected from the Graduate Faculty. At least two members must be from the Chemical Engineering Faculty.

GRaduate Association of Chemical Engineers (GRACE)

GRACE is a graduate student group that was created to foster relationships between the student body and Department. They host several events throughout the school year, including trips to the local springs, research socials, tailgates, and celebrations! Students are encouraged to become involved.

QUICK REFERENCE GUIDELINES

A brief summary of the program requirements for each graduate degree is presented below. More details of the general requirements for each degree program can be found in the [Graduate Catalog](#). Details regarding specific requirements and procedures are given in subsequent sections in this document. Students are strongly advised to read the relevant parts of the Handbook to understand them. **Students are ultimately responsible for ensuring they are on track to finish their degrees.**

Doctoral Program

The Doctor of Philosophy (Ph.D.) degree is for those students who wish to attain mastery of a field of knowledge and demonstrate accomplishment in [Research](#). Study for the Ph.D. degree will be open only to those with demonstrated competence in the core areas of chemical engineering. An M.S. degree is not required for the Ph.D. program unless required by the [Research Adviser](#). Final acceptance into the Ph.D. program requires successful completion of the [Candidacy Examination](#).

As detailed below, the Doctor of Philosophy (Ph.D.) program requirements consist of:

1. Completion of at least 90 credits of coursework, including
 - a. 12 credits of [Required Coursework](#) in chemical engineering;
 - b. 6 credits of [Chemical Engineering Electives](#);
 - c. 6 credits of graduate-level electives;
 - d. Attendance at [Graduate Seminar](#) in each semester of residence, regardless of registration;
 - e. 1 credit of *Learning and Teaching in Engineering* (EGN 6933); and
 - f. 4 credits of *Supervised Teaching* (ECH 6940).
2. Conduct [Research](#) in a safe, ethical, and responsible manner and maintain [Satisfactory Progress](#) towards research objectives.
3. Completion and successful defense of the [Candidacy Examination](#), which includes a written [Research Proposal](#) and an [Oral Qualifying Examination](#).
4. Present a [Research Seminar](#) to the Chemical Engineering Department on the research work contained in the [Doctoral Dissertation](#).
5. Completion and successful defense of the [Final Examination](#), which includes a written [Doctoral Dissertation](#) and a [Final Oral Defense Examination](#).

All work for the Ph.D. degree must be completed within 5 calendar years after the Candidacy Examination. Failure to complete the degree requirements within this timeframe requires the Oral Qualifying Examination to be repeated. There must be at least 2 terms between the Candidacy Examination and the date of the degree. Although the time to complete all Ph.D. degree requirements is dependent on the specific research program and student motivation, **Table 1** shows a common timeline towards graduation. **Table 2** shows the due dates for key milestones during the Ph.D. degree program.

Table 1: Common timeline towards graduation for Ph.D. students.

Year	Fall Semester	Spring Semester	Summer Semester
1	<ul style="list-style-type: none"> • <i>Continuum Basis</i> (ECH 6270) • <i>Molecular Basis</i> (ECH 6272) • <i>Mathematical Basis</i> (ECH 6847) + Select Research Adviser	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Chemical Engineering Kinetics</i> (ECH 6506) or <i>Reactor Design and Optimization</i> (ECH 6526) • <i>Elective</i> (Optional) • <i>Advanced Research</i> (ECH 7979) + Select Supervisory Committee	<ul style="list-style-type: none"> • <i>Advanced Research</i> (ECH 7979)
2	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Elective</i> (Optional) • <i>Elective</i> (Optional) • <i>Advanced Research</i> (ECH 7979) 	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Elective</i> (Optional) • <i>Advanced Research</i> (ECH 7979) + Submit Research Proposal + Complete Oral Qualifying Examination	<ul style="list-style-type: none"> • <i>Advanced Research</i> (ECH 7979) + Submit Supervised Teaching preferences
3	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Supervised Teaching</i> (ECH 6940) • <i>Research for Doctoral Dissertation</i> (ECH 7980) 	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Supervised Teaching</i> (ECH 6940) • <i>Research for Doctoral Dissertation</i> (ECH 7980) + Submit Progress Report	<ul style="list-style-type: none"> • <i>Research for Doctoral Dissertation</i> (ECH 7980)
4	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Research for Doctoral Dissertation</i> (ECH 7980) 	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Research for Doctoral Dissertation</i> (ECH 7980) + Submit Progress Report	<ul style="list-style-type: none"> • <i>Research for Doctoral Dissertation</i> (ECH 7980)
5	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Research for Doctoral Dissertation</i> (ECH 7980) + Present Research Seminar	<ul style="list-style-type: none"> • <i>Graduate Seminar</i> (ECH 6926) • <i>Research for Doctoral Dissertation</i> (ECH 7980) + Submit Doctoral Dissertation + Complete Final Oral Defense Examination	

Table 2: Due dates for Ph.D. milestones.

Ph.D. Milestones		Due Date	Submitted to:
Select Research Adviser		Sept 2019	Graduate Academic Adviser and Associate Chair for Graduate Studies
Select Supervisory Committee		May 2020	Research Adviser and Graduate Academic Adviser
Submit Research Proposal	First draft	Dec 2020	Research Adviser
	First submission	Feb 1, 2021	Research Adviser and Graduate Academic Adviser and Associate Chair for Graduate Studies
	Final submission	2 weeks before Oral Qualifying Examination and by Jun 1, 2021	Research Adviser and Supervisory Committee
Complete Oral Qualifying Examination	Scheduling	At least 1 month in advance	Research Adviser and Supervisory Committee
	Notification	At least 2 weeks in advance	Graduate Academic Adviser
	Final Exam	Jun 1, 2021	Research Adviser and Supervisory Committee
Submit Supervised Teaching preferences		~June 2021	Graduate Academic Adviser and Associate Chair for Graduate Studies
Submit Progress Report		Every May 15 after 2022 until graduation	Research Adviser and Supervisory Committee and Graduate Academic Adviser
Submit Doctoral Dissertation	First draft		Research Adviser
	First submission	Check with Graduate School	Research Adviser and Graduate School Editorial Office
	Exam submission	2 weeks before Final Oral Defense Examination and at least 1 week before Final submission deadline of Graduate School	Research Adviser and Supervisory Committee
	Final submission	before Final submission deadline of Graduate School	Graduate School Editorial Office
Present Research Seminar		During last year of degree	Graduate Academic Adviser
Complete Final Oral Defense Examination	Scheduling	At least 1 month in advance	Research Adviser and Supervisory Committee
	Notification	At least 2 weeks in advance	Graduate Academic Adviser
	Final Examination	At least 1 week before Final submission deadline of Graduate School for Doctoral Dissertation	Research Adviser and Supervisory Committee

Master of Science Program

The Master of Science (M.S.) degree is for those students who wish to expand their knowledge of chemical engineering and gain valuable experience in [Research](#) or industrial practice through an [Internship](#). The M.S. program is open only to students with demonstrated competence in the core areas of chemical engineering through completion of an undergraduate chemical engineering degree. M.S. students need to focus on a specialization area of chemical engineering. Those students with a strong interest in [Research](#) may choose to complete a [Master's Thesis](#) as an option.

As detailed below, the Master of Science (M.S.) program requirements consist of:

1. Completion of at least 30 credits of coursework, including
 - a. 12 credits of [Required Coursework](#) in chemical engineering; and
 - b. 3 credits of [Chemical Engineering Electives](#).
2. Completion and successful defense of the [Final Examination](#).

The minimum requirements for the M.S. program can be met in 1 year following a Bachelor of Science degree. However, many M.S. students choose to complete their degree in approximately 2 years. Although the time to complete all M.S. degree requirements is dependent on the specific objectives and motivation of the student, **Table 3** shows a common timeline towards graduation. **Table 4** shows the due dates for key milestones during the M.S. degree program.

Table 3: Common timeline towards graduation for M.S. students.

Year	Fall Semester	Spring Semester
1	<ul style="list-style-type: none"> • <i>Continuum Basis</i> (ECH 6270) • <i>Molecular Basis</i> (ECH 6272)* • <i>Mathematical Basis</i> (ECH 6847) + Select Research Adviser* 	<ul style="list-style-type: none"> • <i>Chemical Engineering Kinetics</i> (ECH 6506) or <i>Reactor Design and Optimization</i> (ECH 6526) • <i>Advanced Chemical and Biological Processing Lab</i> (ECH 6937) • <i>Elective</i> (Optional)
2	<ul style="list-style-type: none"> • <i>Elective</i> (Optional) • <i>Elective</i> (Optional) • <i>Elective</i> (Optional) + Select Supervisory Committee* 	<ul style="list-style-type: none"> • <i>Elective</i> (Optional) + Submit Master's Thesis* or Report + Complete Final Oral Defense Examination*

* Degree requirements for M.S. students completing a Master's Thesis only.

Table 4: Due dates for M.S. milestones.

M.S. Milestones		Due Date	Submitted to:
Select Research Adviser *		Jan 2019	Graduate Academic Adviser and Master's Program Coordinator and Associate Chair for Graduate Studies
Select Supervisory Committee *		Dec 2019	Research Adviser and Graduate Academic Adviser
Submit Master's Thesis *	First draft		Research Adviser
	First submission	Check with Graduate School	Research Adviser and Graduate School Editorial Office
	Exam submission	2 weeks before Final Oral Defense Examination and at least 1 week before Final submission deadline of Graduate School	Research Adviser and Supervisory Committee
	Final submission	before Final submission deadline of Graduate School	Graduate School Editorial Office
or Submit Report	At least 2 weeks before the end of term	Graduate Academic Adviser and Master's Program Coordinator	Submit Report
Complete Final Oral Defense Examination *	Scheduling	At least 1 month in advance	Research Adviser and Supervisory Committee
	Notification	At least 2 weeks in advance	Graduate Academic Adviser
	Final Examination	At least 1 week before Final submission deadline of Graduate School for Master's Thesis	Research Adviser and Supervisory Committee

* Degree requirements for M.S. students completing a Master's Thesis only.

Note that registration is not required for the Summer semester but interested M.S. students can take [Research and Individual Work Courses](#) or electives during these semesters.

Master of Engineering Program

The Master of Engineering (M.E.) degree is for those students who wish to gain knowledge of chemical engineering and obtain valuable experience in [Research](#) or industrial practice through an [Internship](#). The M.E. program is for students without an undergraduate chemical engineering degree. M.E. students need to focus on a specialization area of chemical engineering. Those students with a strong interest in [Research](#) may choose to complete a [Master's Thesis](#) as an option.

As detailed below, the Master of Engineering (M.E.) program requirements consist of:

1. Completion of at least 30 credits of coursework, including
 - a. 12 credits of [Required Coursework](#) in chemical engineering; and
 - b. 3 credits of [Chemical Engineering Electives](#).
2. Completion and successful defense of the [Final Examination](#).

To ensure that M.E. students have a comprehensive understanding of fundamental chemical engineering principles, the M.E. program has an additional requirement of:

3. Completion of [Undergraduate Coursework](#) based on prior degree of student.

The minimum requirements for the M.E. program can be met in 24 months following a Bachelor of Science degree. Although the time to complete all M.E. degree requirements is dependent on the specific objectives and motivation of the student, **Table 5** shows a common timeline towards graduation. **Table 6** shows the due dates for key milestones during the M.E. degree program.

Table 5: Common timeline towards graduation for M.E. students.

Year	Fall Semester	Spring Semester	Summer Semester
1	<ul style="list-style-type: none"> • <i>Material & Energy Balances</i> (ECH 3023) • <i>Chemical Engineering Kinetics</i> (ECH 4504) • <i>Mathematical Basis</i> (ECH 6847) + Select Research Adviser* 	<ul style="list-style-type: none"> • <i>Elementary Transport</i> (ECH 3264) • <i>Separation and Mass Transfer Operations</i> (ECH 4403) • <i>Chemical Engineering Kinetics</i> (ECH 6506) or <i>Reactor Design and Optimization</i> (ECH 6526) 	<ul style="list-style-type: none"> • <i>Elective</i> (Optional) • <i>Elective</i> (Optional)
2	<ul style="list-style-type: none"> • <i>Continuum Basis</i> (ECH 6270) • <i>Process Thermodynamics</i> (ECH 3101) • <i>Elective</i> (Optional) + Select Supervisory Committee* 	<ul style="list-style-type: none"> • <i>Advanced Chemical and Biological Processing Lab</i> (ECH 6937) • <i>Elective</i> (Optional) • <i>Elective</i> (Optional) 	<ul style="list-style-type: none"> • <i>Elective</i> (Optional) + Submit Master's Thesis* or Report • Complete Final Oral Defense Examination

* Degree requirements for M.E. students completing a Master's Thesis only.

Table 6: Due dates for M.E. milestones.

M.S. Milestones		Due Date	Submitted to:
Select Research Adviser *		Jan 2019	Graduate Academic Adviser and Master's Program Coordinator and Associate Chair for Graduate Studies
Select Supervisory Committee *		Dec 2019	Research Adviser and Graduate Academic Adviser
Submit Master's Thesis *	First draft		Research Adviser
	First submission	Check with Graduate School	Research Adviser and Graduate School Editorial Office
	Exam submission	2 weeks before Final Oral Defense Examination and at least 1 week before Final submission deadline of Graduate School	Research Adviser and Supervisory Committee
	Final submission	before Final submission deadline of Graduate School	Graduate School Editorial Office
or Submit Report	At least 2 weeks before the end of term	Graduate Academic Adviser and Master's Program Coordinator	Submit Report
Complete Final Oral Defense Examination *	Scheduling	At least 1 month in advance	Research Adviser and Supervisory Committee
	Notification	At least 2 weeks in advance	Graduate Academic Adviser
	Final Examination	At least 1 week before Final submission deadline of Graduate School for Master's Thesis	Research Adviser and Supervisory Committee

* Degree requirements for M.E. students completing a Master's Thesis only.

GETTING STARTED

The first semester of graduate school can be a challenge. Students must move to a new school and city where they do not know other students or faculty, begin taking challenging coursework, complete visa, enrollment, and employment documentation, and become familiar with new policies and procedures of the University and Department. In addition, many graduate students commencing their research careers must [Choose a Research Adviser](#) and begin learning what it means to conduct cutting-edge research. This section provides some guidance for students as they transition to graduate school in the Department of Chemical Engineering at the University of Florida.

Graduate Student Expectations

The expectations and work conducted in graduate school is entirely different from what students experienced as undergraduate students. Students need to recognize the differences and adapt quickly. [Satisfactory Progress](#) in graduate school requires consistent productivity through independent discovery. Discovery is difficult to achieve and requires exceptional commitment and motivation. Few successful scientists or engineers work less than 60 hours per week. Graduate students often require a strong work ethic, including significant work outside of normal hours, to be successful in their chosen field of specialization. Specifically, the Ph.D. degree signifies that a student is capable of running an independent research investigation and that they are able to discuss the findings confidently with other experts in the field. In addition, most Ph.D. students are financially supported by research grants secured by the [Research Adviser](#). Since these research grants have a fixed duration and well-defined objectives, graduate students must take ownership of their research project and complete the research objectives in a timely manner. Therefore, successful graduate students dedicate themselves to their work and make it their top priority to achieve a high level of competence in their field so that they can achieve swift progress in their research project.

Graduate students are not only expected to excel in the classroom and laboratory, they should demonstrate professional and ethical behavior at all times. Students are encouraged to practice professional behavior from the beginning of their time in graduate school. This early start can help students adopt habits of respect, thoughtfulness, and self-reliance that will help them throughout their career.

First Semester

Students often have misconceptions about the nature of research and believe that they will be working on well-defined problems that are solved using known tools and methods. These misconceptions often lead to frustration. Some students may also experience self-doubt known as the “impostor syndrome.” This feeling of not belonging or being an impostor is common because students become surrounded by other students that have excelled in their coursework and researchers who have worked in the field for decades and have much more experience and knowledge of the research field. Developing a plan to achieve all of the necessary skills for graduate school and using the resources available is a large step forward in becoming an expert in your chosen field and removing this self-doubt.

Interacting with Others: Rather than focusing on self-doubt, be humble and learn as much as you can from the [Research Adviser](#) and other graduate students early. Attend department events and support your colleagues and classmates. These personal and professional relationships can last your entire career.

Motivation and Attitude: Successful graduate students develop autonomy, independence, and high levels of self-regulation. Students are expected to achieve degree milestones independently with minimal supervision. This autonomy requires students to maintain a positive attitude and become self-motivated. A key step is establishing manageable goals that provide a sense of accomplishment.

Time Management: Graduate school requires students to attend class, complete homework, teach other students, plan research experiments, read the literature, write papers, present at conferences, and mentor other students. Students are encouraged to develop time management skills early, including (i) identification of peak work times for scheduling the most intellectually challenging and important tasks; (ii) establishment of clear short-term and long-term goals and prioritizing their completion; and (iii) regular assessment of recent activities to ensure efficient use of time.

Developing Good Research Skills: The majority of a student's time should be spent on research-related activities. Students can begin developing the skills needed to be successful in research before even joining a research group. Students should begin familiarizing themselves with how to maintain a laboratory notebook, including how to use it to manage research and archive important findings as well as its importance in intellectual property and the prevention of fraud. Students can also learn how to use local resources to conduct literature reviews and complete the required training expected of all students.

Coping with Setbacks in Graduate School: Research is highly competitive and requires continued performance at a very high level. The stress associated with this in addition to the inevitable failures and disappointments inherent to research can be difficult to handle for new students. Students should understand that every researcher, however successful, has failed many times in their career. Students should focus on learning from these mistakes and evaluating how to avoid them in the future. The University has [Graduate Student Wellness Services](#) available to help.

Learn Policies and Procedures: Incoming students are responsible for becoming informed and observing all program regulations and procedures described in this Handbook. All students are provided with a University of Florida email account (ufl.edu) upon entrance to the program. The Department will use this account for all official communications. Students are responsible for promptly and thoroughly reading emails from these accounts and are expected to communicate in a professional manner.

Registration for courses must be completed online. Graduate students must enroll for a minimum of 9 credits in their first semester. Incoming Ph.D. students must attend the [Graduate Seminar](#) regardless of whether they have registered for the course. Instructions for registering for classes will be discussed at the onboarding meeting before the start of the first semester. Students are responsible for late fees and any other fees and charges incurred.

For all incoming Ph.D. students, registration fees, health insurance and non-resident tuition for the Fall semester are paid by the Department. Stipends are paid on a biweekly basis. Students will not be able to receive their first stipend until they have completed all employment documentation.

Start Your Research Career: Ph.D. and Master's students completing a thesis are expected to identify a [Research Adviser](#). The choice of a [Research Adviser](#) is likely to be the most important decision that a first-year graduate student makes. This Research Adviser will serve as their primary mentor for their [Doctoral Dissertation](#) or [Master's Thesis](#) and as the Chair of their [Supervisory Committee](#). The Research Adviser must have [Graduate Faculty](#) status within the Department of Chemical Engineering. If the desired Research Adviser is not a member of the [Chemical Engineering Faculty](#) but is a member of the Graduate Faculty, they can only serve as the co-adviser of the student. Students should devote significant thought on how to [Choose a Research Adviser](#).

Complete Chemical Engineering Basis Courses: The chemical engineering basis courses provide graduate students an opportunity to demonstrate their dedication and competency to a potential [Research Adviser](#). Graduate students should dedicate sufficient time and effort to the completion of these courses. Note that Ph.D. students must receive a letter grade of B- or better and a GPA above 3.0 in the three Basis courses to maintain their stipend, tuition, and healthcare benefits.

Departmental Access & Resources

This section provides brief instructions on how to gain access to various departmental resources.

Computer Accounts and Facilities

A GatorLink account is a student's computer network identity at the University of Florida. Every student, faculty, and staff member is expected to have a GatorLink username and password. Many services, including email, are accessed with the GatorLink account. For more information about GatorLink accounts, please visit <http://helpdesk.ufl.edu/> or the [UFIT Wiki](#). For electronic communications, all students are provided with a University of Florida email account (ufl.edu) upon entrance to the program. The Department will use this UF account for all official communications. Students are responsible for promptly and thoroughly reading emails from these accounts and are expected to communicate in a professional manner. The Chemical Engineering Computer Support Team is located in ChE 319A and can be reached by email at ticket@che.ufl.edu. They can be contacted for any computing related issues, including email issues, network access, printing, computer viruses, department-controlled software applications, and obtaining a new IP Address for a computer or printer.

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

A copy machine (with scanner functionality) is available in ChE 233 for students conducting [Research](#) and [Supervised Teaching](#) coursework. Access codes can be obtained from the Main Chemical Engineering Office. The copier cannot be used for personal copying.

Office Space, Keys, and Card Access

When a student chooses a [Research Adviser](#), they move into a laboratory or office space associated with their research group. Keys for the office and lab space can be obtained from the Main Office of the Chemical Engineering Department after Research Adviser approval. All graduate students have access to the building outside of normal business hours with their Gator 1 card. Please go to the Main Office of the Chemical Engineering Department about any problems with Gator 1 card access.

Student Mailboxes

Each student is assigned a mailbox, which is located on the second floor of the Chemical Engineering Building. Students are encouraged to check their mailbox regularly for notifications.

Room Reservations

Graduate students may need to reserve a room for research presentations or other department-related events. To make a reservation in the Department conference rooms, graduate students should contact the Main Office of the Chemical Engineering Department. Students wishing to reserve other rooms across campus should seek the responsible authority. Our students sometimes use the Particle Science & Technology Building (contact [Hollie Starr](#)) when the Department conference rooms are unavailable.

RESEARCH

Students conducting research become a member of the greater scientific community. Their research will be motivated by technical and societal problems and international experts in your field will see their work. The Department of Chemical Engineering has several faculty that have been recognized for their contributions to teaching and mentoring graduate students through their research. The faculty will help students develop the work ethic, deep thinking, and creativity necessary to find innovative solutions.

All students conducting research in a laboratory must be registered for research credits or employed by the University. In addition, all researchers must follow appropriate policies for laboratory access, safety, and responsible conduct in research. Students should review the Program Requirements to determine how to enroll in the appropriate Research Courses.

Choose a Research Adviser

The [Research Adviser](#) plays a central role in the research conducted by graduate students. While a student's research ultimately reflects their ideas, contributions, and impact on a field, the Research Adviser provides important leadership and guidance on how to conduct experiments and attain the desired results. Furthermore, the Research Adviser is expected to support a Ph.D. student financially through a Research Appointment and provide the resources necessary to complete the student's [Doctoral Dissertation](#). Many academic milestones in the degree program also require significant involvement from the Research Adviser. Therefore, the relationship between a student and Research Adviser is important to the student's success. Students need to find a Research Adviser that is supportive and helps them mature into a researcher.

Students should understand the mechanism by which they are assigned a Research Adviser and collect all available information that will help guide their decision. During the first semester of the degree plan, [Chemical Engineering Faculty](#) that have sponsored research projects will present brief introductions to the research to be conducted by a Ph.D. student. Ph.D. students are required to attend these discussions to learn about the projects and ask questions. Ph.D. students are encouraged to meet with the faculty and their current graduate students to learn more about the research program and its motivation. The purpose of these meetings is to provide students with a better understanding of the research project, the technical skills and methods to be developed, and expected results.

These meetings also allow the Research Adviser to evaluate the students as potential research assistants in their laboratory. Students should be cautioned that faculty members may be hesitant to extend support for a student that has had little interaction and engagement with them (e.g., meeting only once).

Ph.D. students should meet with at least three different faculty during the selection period so that they can make an informed decision about their preferences for a Research Adviser. The assignment of a Research Adviser to the Ph.D. student will be made by the [Associate Chair for Graduate Studies](#) based on Ph.D. student preferences and the needs of the graduate program. Every effort will be made to assign students their preferred research project. However, students must note that faculty members can only accommodate a limited number of students in their group. Further, the Department has made a commitment to the faculty to provide them with sufficient students for their funded projects.

In rare occasions, Ph.D. students may not find a Research Adviser by the end of their first Fall term. Should this situation arise, the Department may appoint the student as Teaching Assistant for the Spring semester. Students must proactively search for a Research Adviser during this period. If a student has not found a Research Adviser by the end of the Spring semester, then the student will be dismissed from the Graduate Program for not making [Satisfactory Progress](#) toward the Ph.D. degree.

M.S. and M.E. students should also meet with [Graduate Faculty](#) to discuss research projects that can be conducted by a Master's student. Master's students are encouraged to speak with the faculty and their

current graduate students to learn more about the research program. Master's students should meet with at least two different faculty so that they can make an informed decision about their preferences for a Research Adviser. The assignment of a Research Adviser for Master's students will be made by the Associate Chair for Graduate Studies and the [Master's Program Coordinator](#) based on student preferences and the needs of the graduate program.

Students should be aware that the Research Adviser is to mentor them in educational aspects of their degree. **Students are not expected to provide gifts or any other services to their Research Adviser at any time.** Students should report any inappropriate requests from their Research Adviser immediately with the Associate Chair for Graduate Studies or the [Department Chair](#).

Laboratory Safety

The Department of Chemical Engineering considers laboratory safety to be both an educational objective and a laboratory imperative. The Department is committed to providing a safe and healthy working and learning environment for all of its students. An important aspect of safety is understanding that we are all responsible for our own safety and those around us. Therefore, **graduate students conducting experiments are responsible for the safe conduct of that experiment.** Any concerns regarding safety or training should be directed to your [Research Adviser](#), the Student Safety Council, the HWCOE Director of Laboratory Safety, or Environmental Health and Safety (<http://www.ehs.ufl.edu/>). If you feel that your concerns are not being addressed, you should contact the [Department Chair](#) or the [Associate Chair for Graduate Studies](#).

Graduate students are required to familiarize themselves and abide by all safety rules in the laboratory. Students are expected to be responsive to any and all safety improvements suggested by the Research Adviser, the Student Safety Council, the HWCOE Director of Laboratory Safety, or Environmental Health and Safety. **Failure to follow safe practices could result in dismissal from the program.**

Sustaining a culture of excellent laboratory safety starts with rigorous training. Because of its importance, most laboratory safety training is annual. Students are expected to keep their laboratory safety training record updated at all times. To further promote a culture of safety, our Department has a Student Safety Council, which is comprised of graduate students who conduct periodic laboratory inspections and provide guidance about health and safety procedures. Students are strongly encouraged to join the council.

All laboratory personnel (including Ph.D. and undergraduate students, postdoctoral researchers, volunteers, hosted minors, and technicians) are required to take the online course *Chemical Hygiene Plan for Laboratory Staff* (EHS 861). Additional training will be provided by your Research Adviser based on the laboratory-specific Chemical Hygiene Program created for your research activities. Annual training is required for all employees who generate or manage hazardous waste. Additional one-time or annual training may be required for researchers working in special-risk areas.

Proper personal protective equipment (PPE) is required at all times when working in all Chemical Engineering laboratories. Students should evaluate the Chemical Hygiene Plan for the laboratories in which they work to determine the appropriate PPE. Students should understand that selection of the proper PPE (lab coat, gloves, etc.) is often dependent on the inherent dangers within the laboratory. Students should review the safety information to ensure that they have the proper PPE for the experiments they are conducting.

Should **any incident** occur in the laboratory, the Research Adviser and the Chemical Engineering Safety Coordinator must be informed of the injury as soon as is practicable after receiving any emergency treatment. All students conducting research in a laboratory should be enrolled in research credits or be employed by the University. These procedures ensure that students are covered by Workers Compensation for any injuries sustained while conducting research. The student, Research Adviser, and the Chemical Engineering Safety Coordinator should work together to ensure that any incident is properly reported.

DOCTORAL PROGRAM REQUIREMENTS

The Ph.D. degree plan is primarily a [Research](#) program. The granting of the degree is based on general proficiency and distinctive achievements of the Ph.D. candidate in their chosen research field. Ph.D. students are expected to demonstrate the ability to conduct independent investigation of research problems and attain mastery of a field of knowledge, as exhibited by the [Final Examination](#).

The Ph.D. program starts with the student taking appropriate coursework in preparation for the [Candidacy Examination](#). Final acceptance into the Ph.D. program requires successful completion of the Candidacy Examination during the second year of their degree plan. Ph.D. students will be assigned a [Research Adviser](#) during the first semester of the degree plan. The primary role of the Research Adviser is to prepare the Ph.D. student to conduct independent research. Ph.D. students will work closely with their Research Adviser and [Supervisory Committee](#) to attain the scientific and technical skills required to demonstrate mastery of the field for the Ph.D. degree.

All Ph.D. students appointed as Graduate Assistants must register for 9 credits in the Spring semester, 9 credits in the Fall semester, and 6 credits in the Summer semester. The Ph.D. degree requires successful completion of a minimum of 90 credits subject to restriction and classifications approved by the Department. A minimum of 1 year in [Residence](#) at a University of Florida campus is required. In most semesters, Ph.D. students will register for [Research Courses](#). A minimum of 24 credits of graduate-level coursework taken after the Bachelor of Science Degree are required. The [Required Coursework](#) in chemical engineering consists of 12 credits. Ph.D. students must then complete 12 credits of electives of which 6 credits must be in [Chemical Engineering Electives](#). Any courses listed at 5000 and above within the HWCOE are acceptable for the remaining credits. Students may prepare a [Petition](#) for courses outside the HWCOE.

Ph.D. students must also enroll in *Graduate Seminar* (ECH 6926) each semester of residence and complete at least 4 credits of *Supervised Teaching* (ECH 6940). These courses are not included in the 24 credits of required coursework. Finally, Ph.D. students are required to present their research in a [Research Seminar](#).

Students must maintain an overall, major, and minor GPA of 3.00 (truncated¹) at all times. If either the overall, major, or minor GPA drops below 3.00, the student may be denied further registration and the student cannot graduate until the GPA is elevated above 3.00. Any student that does not maintain [Satisfactory Progress](#) in scholarship, research, or academic milestones may be subsequently dismissed from the degree program.

Program Schedule

The minimum requirements for the Ph.D. program can be met in 3 years following a Bachelor of Science degree. However, many Ph.D. students will require up to 5 years to complete all degree requirements. The Department considers a 5-year time horizon to be reasonable for completion of the Ph.D. program by a full-time student who matriculates with no deficiencies. This time is measured from the semester a student begins their doctoral program. The Department expects most students to graduate within this timeframe with only rare cases requiring close to 6 years. Except under extraordinary circumstances, no student will be supported after six years of residence.

Training Requirements

All students enrolled in [Research Courses](#) or funded by NSF, NIH, or USDA awards must complete the general [Responsible Conduct in Research \(RCR\) training](#).

¹ Truncated means that the GPA is not rounded-up, e.g. a 2.99 GPA would not be considered a 3.0.

Doctoral Required Coursework

The chemical engineering coursework required of all Ph.D. students consists of:

- *Continuum Basis* (ECH 6270)
- *Molecular Basis* (ECH 6272)
- *Mathematical Basis* (ECH 6847)
- *Chemical Engineering Kinetics* (ECH 6506) or *Reactor Design and Optimization* (ECH 6526)

The core courses are taught only once a year. The three Basis courses (ECH 6270, ECH 6272, and ECH 6847) are offered in the Fall semester while *Chemical Engineering Kinetics* (ECH 6506) and *Reactor Design and Optimization* (ECH 6526) are offered in alternating Spring semesters. Students must receive a letter grade of B- or better in the three Basis courses.

Research Courses

Ph.D. students must register for *Advanced Research* (ECH 7979) before passing the [Candidacy Examination](#) and for *Research for Doctoral Dissertation* (ECH 7980) after passing the Candidacy Examination. **Although students may only be registered for a few research credits in a given semester, they are expected to devote their full effort towards their research to continue making [Satisfactory Progress](#).**

Graduate Seminar Course

Graduate seminars keep students informed of new developments in chemical engineering and the breadth of [Research](#) conducted in the field. **It is critical to the success of our Department that all seminars are well attended.** Therefore, Ph.D. students shall attend the Chemical Engineering *Graduate Seminar* (ECH 6926) every semester of residence, regardless of registration. Students are allowed as many as two absences from seminar each semester for any reason. If a student has a conflict with seminar due to another enrolled course (including [Supervised Teaching](#)) or if the student will not be in residence during the semester, they should instruct the [Associate Chair for Graduate Studies](#) prior to the start of the semester.

Students will receive seminar announcements from department staff reminding them of upcoming seminars. It is expected that all students check their UF email account regularly to stay informed of upcoming seminars. Regardless, students are responsible for their own attendance.

Seminar speakers are guests of our Department who take time away from their other duties to share their most exciting research results with our students and faculty. Students are expected to treat speakers with respect and utmost professionalism. This includes being on time for the seminar, remaining silent during presentations and question & answer sessions, paying attention to the presentation and discussion, and contributing to the experience by raising questions for the speaker to answer.

Supervised Teaching Course

To gain valuable teaching and communication experience consistent with the Ph.D. degree, all Ph.D. students are required to take the *Supervised Teaching* (ECH 6940) course as part of their degree requirements. Students will assist instructors in undergraduate or graduate coursework for at least two semesters. Students are expected to have at least 1 hour of contact time with the students in the assigned course each week of the semester. Other responsibilities may include delivering lectures, holding office hours and recitation sessions, preparing homework and exams, grading, and supervising students in laboratory courses. The Supervised Teacher is expected to follow the attendance policy of the instructor. It is assumed that the Supervised Teacher will be a role model to students and demonstrate professional and ethical behavior, including punctual attendance.

Students must register for *Supervised Teaching* (ECH 6940) during each semester they assist in the classroom. Students must complete 4 credits of *Supervised Teaching* during their degree program. *Learning and Teaching in Engineering* (EGN 6933) is a required pre-requisite for the *Supervised Teaching* (ECH 6940) course. Ph.D. students should register for 2 credits each semester. Graduate students must be on campus during the entire semester until grades are submitted for the course they are assigned. Exceptions for travel to conferences, meetings, or research experimentation must be approved by the instructor well in advance and preferably at the start of the semester.

Students will discuss their specific roles and responsibilities of the course with the instructor prior to the start of the semester. At the end of the semester, the instructor will issue a Pass/Fail grade for the Supervised Teacher. The Supervised Teaching assignment will not be counted towards the degree requirements if the instructor issues a Fail grade but this grade will not appear on the transcript. **Exceptions to Supervised Teaching will not be permitted.**

The [Associate Chair for Graduate Studies](#) will send a list of available opportunities to Ph.D. students prior to the start of their third year in the degree program. Ph.D. students must return these preferences to the Associate Chair for Graduate Studies before the due date in [Table 2](#). Supervised Teaching assignments will be made by the Associate Chair for Graduate Studies based on Ph.D. student course preferences and the needs of the undergraduate and graduate program.

Ph.D. students are ultimately responsible for ensuring that their Supervised Teaching requirement is met prior to graduation. Ph.D. students who anticipate graduating within one year but have not yet fulfilled the two-semester Supervised Teaching requirement must notify the Associate Chair for Graduate Studies.

Progress Reports

Ph.D. students must provide an update on their [Doctoral Dissertation](#) progress to their [Supervisory Committee](#) by the stated due date in [Table 2](#) for each Spring semester beginning with their third year in the degree program. A Progress Report must be submitted every Spring semester thereafter until graduation unless graduating the following Summer semester. The progress update may take the form of either an oral presentation to the committee or a concisely written Progress Report to committee members followed by individual meetings as necessary. The written Progress Report is not to exceed 10 pages and should include a statement of progress to-date and a plan for future work toward degree completion. Any completed manuscripts should be appended. To document compliance, Ph.D. students are to have each Supervisory Committee member sign a copy of the Progress Status Approval Form (available from the [Graduate Academic Adviser](#)) and the signed forms are to be given to the Graduate Academic Adviser.

Research Seminar Requirement

Ph.D. candidates are required to present a Research Seminar to an audience comprised of chemical engineering graduate students and faculty. The Research Seminar shall be publicly announced and held on campus. The Research Seminar should be scheduled to take place during the last two semesters of the Ph.D. candidate's residence and should cover selected results from the candidate's [Doctoral Dissertation](#). Ph.D. candidates should provide the Seminar Instructor with a title and a short abstract for the presentation in advance and the Research Seminar presentation should last no more than 30 minutes, including a 10-minute period for questions. **The Ph.D. candidate is responsible for contacting the Seminar Instructor to schedule the time and date of the Research Seminar at least one semester before the desired date.** At the discretion of the [Associate Chair for Graduate Studies](#), presentation in the [GRaduate Association of Chemical Engineers \(GRACE\)](#) symposium or at a national or international conference in the last year of the candidate's residence can be used as a substitute for the Research Seminar. **The Ph.D. degree will not be issued to candidates until the Research Seminar requirement is satisfied.**

Time Requirements

Campus Residence Requirement: Beyond the first 30 credits counted toward the doctoral degree, students must complete 30 credits enrolled at the University of Florida campus or at an approved branch station of the University of Florida Agricultural Experiment Stations or the Graduate Engineering and Research Center.

Continuous Registration: Continuous registration is expected of all doctoral students. A [Leave of Absence](#) may be granted under extraordinary circumstances. A doctoral student who ceases to be registered at the University for more than 1 term needs prior written approval from the [Research Adviser](#) for a Leave of Absence of the stated period of time. The student must reapply for admission on returning.

Graduation: All work for the Ph.D. degree must be completed within 5 calendar years after the [Candidacy Examination](#). Failure to complete the degree requirements within this timeframe requires the [Oral Qualifying Examination](#) to be repeated. There must be at least 2 terms between the Candidacy Examination and the date of the degree.

Candidacy Examination

A graduate student becomes a candidate for the Ph.D. degree after successful completion of both the [Research Proposal](#) and the [Oral Qualifying Examination](#). Such admission requires the approval of the student's [Supervisory Committee](#), the [Department Chair](#), the Dean of HWCOE, and the Dean of the Graduate School. The approval will be based on:

- The academic record of the student;
- Supervisory Committee opinion on overall fitness for candidacy;
- An approved [Doctoral Dissertation](#) topic; and
- An Oral Qualifying Examination.

To be eligible for the [Candidacy Examination](#), Ph.D. students must have:

1. Appointed a Supervisory Committee, including a [Research Adviser](#).
2. Completed the three core Basis courses (*Continuum Basis*, *Molecular Basis*, and *Mathematical Basis* of Chemical Engineering) with a B- or better in each Basis course.
3. Maintained [Satisfactory Progress](#) for their degree, including no incomplete grades.
4. Received a satisfactory grade for [Research Courses](#) in the semester **prior** to the Oral Qualifying Examination. This grade must be assigned by the Research Adviser and placed on record in the student's file prior to the exam.

The purpose of the Research Proposal and the Oral Qualifying Examination is to assess the Ph.D. student's potential to perform scholarly [Research](#). The objective is to ensure that student's begin their Doctoral Dissertation with a set of goals based upon a thorough understanding of the literature, a logical analysis of the proposed research problem, and adequate preliminary results showing their ability to collect the required data. The student is expected to demonstrate creativity, impetus, curiosity, and professionalism. The performance of the Ph.D. student in the Oral Qualifying Examination will be evaluated by the Supervisory Committee for:

1. Knowledge in fundamentals of chemical engineering, particularly related to their research field, and
2. Ability to conduct scholarly research.

Research Proposal

The Research Proposal is a written description of the research work to be conducted by the Ph.D. student. The ability to write clearly and succinctly is an essential skill for a chemical engineer. Therefore, the Research Proposal is to be **written primarily by the Ph.D. student** in consultation with the [Research Adviser](#). After the consent of the Research Adviser, the first draft of the Research Proposal should be submitted to the [Graduate Academic Adviser](#) and the [Associate Chair for Graduate Studies](#) by the stated due date in [Table 2](#). **The Research Proposal should also be submitted to the [Supervisory Committee members no later than 2 weeks before the \[Oral Qualifying Examination\]\(#\)](#).**

The purpose of the written Research Proposal is to demonstrate that Ph.D. students can identify important research problems, prepare a detailed experimental plan to study the research problem, utilize the tools needed to conduct advanced research to address the research problem, and analyze the results obtained by their research. The Research Proposal must outline the area of research and its importance, a clear problem statement, background to the research area, specific tasks that will be performed, preliminary results, and subsequent steps. A number of excellent manuals (for example, references available via www.nsf.gov) are available on writing Research Proposal and may be used as guides in preparing the proposal. A maximum of 15 single-spaced, typed pages, including figures and tables is allowed. A font type of Arial or Times New Roman using a minimum of 11-point should be used for the main text. Captions for tables and figures can use a minimum of a 9-point font. The Research Proposal should include a title, a table of contents, references, and an abstract in addition to the 15 pages of text. A maximum of two appendices, such as submitted papers, detailed derivations, etc. could be included in addition to the 15-page proposal. Although there is no set format, the main body of the document often includes the following sections:

1. **Introduction:** A concise overview of the research topic and its importance. (Suggested length: 1 page)
2. **Background:** Literature review and relevant background needed to place the proposed study in the larger context of the field and to highlight the relevance and novelty of the proposed work. (Suggested length: 2 – 3 pages)
3. **Problem description:** A description of the specific problem, objectives of the proposal, and the novelty of the proposed work. (Suggested length: 1 page)
4. **Specific objectives/aims:** A description of proposed theoretical and/or experimental work and a list of specific tasks (including feasibility probes) needed to accomplish the proposed objectives. (Suggested length: 1 page or less)
5. **Preliminary work:** A description of preliminary work performed by the Ph.D. student that supports the feasibility of the proposed work and an analysis or discussion of such preliminary work. (Suggested length: 2 – 4 pages)
6. **Safety Assessment:** A detailed analysis of the experimental setup to identify possible causes of accidents, steps to avoid accidents, and steps to take in case of an accident. The Supervisory Committee will include questions on safety during the Oral Qualifying Examination. (Suggested length: 1 page or less)
7. **Proposed Work:** Details of the subsequent steps planned to achieve the specific objectives of the research. (Suggested length: 3 – 5 pages)
8. **Summary:** A concise statement of the expected outcomes of the proposed research. (Suggested length: 1 page or less)
9. **References:** A list of references cited in the proposal.
10. **Tables & Figures:** Tables and figures used in the proposal should be integrated into the text.

The format of the written Research Proposal is not fixed. The guidelines above must be interpreted as suggestions that may be altered whenever necessary to improve the clarity and legibility of the proposed work. However, Ph.D. students should ensure that any deviations produce a more persuasive and better-structured Research Proposal.

Oral Qualifying Examination

After receiving consent from the [Research Adviser](#) and the [Associate Chair for Graduate Studies](#), the Ph.D. student may schedule the Oral Qualifying Examination. The Oral Qualifying Examination is a public presentation of the [Research Proposal](#) followed by a private examination of the Ph.D. student by the [Supervisory Committee](#). The purpose of the Oral Qualifying Examination is to evaluate the student's ability to engage in scientific and technical discussions with other engineers and scientists that may not necessarily be experts in their chosen field. **Students are not expected to provide the Supervisory Committee or audience any food or drinks under any circumstances for the examination.** The Supervisory Committee will discuss with the student all aspects of the Research Proposal as well as the scientific and technical issues surrounding the research topic.

Ph.D. students are encouraged to plan ahead and schedule the Oral Qualifying Examination at least one month ahead of time. The Oral Qualifying Examination shall be publicly announced and the initial presentation by the Ph.D. student will be open to the public. The Oral Qualifying Examination will last 2 hours or more and will be divided into three parts.

1. In the first part, the Ph.D. student will present the Research Proposal. This part of the exam is public and should last about 30 minutes.
2. The Supervisory Committee will question the Ph.D. student on fundamental issues pertinent to the research area in the second part. The Supervisory Committee will evaluate the Ph.D. student's breadth of knowledge in chemical engineering fundamentals related to the area of research and ability to think critically. This part of the exam should last about 30 minutes.
3. In the last part, the Supervisory Committee will question the Ph.D. student on issues directly related to the Research Proposal. This part of the exam should last about 60 minutes or more. The Supervisory Committee will evaluate the quality of the Research Proposal and the response to questions about the Research Proposal in order to assess the Ph.D. student's oral communication skills, depth of knowledge in their chosen research field, ability to think critically, and ability to formulate and defend a research plan.

All members of the Supervisory Committee must take part in the examination. The Oral Qualifying Examination may be conducted using video and/or telecommunications. However, the Ph.D. student and Chair or Co-Chair must be in the same physical location. All other Supervisory Committee members may participate from remote sites via technological means. If a Supervisory Committee member is unable to attend, students may [Change Supervisory Committee Member](#) if approved by the Department. The substitute Supervisory Committee member should be given sufficient time to read the Research Proposal and prepare for the Oral Qualifying Examination. A minimum of two weeks is recommended.

Assessment of the Candidacy Examination

The [Supervisory Committee](#) will provide feedback to the candidate on all aspects of the [Research Proposal](#) and the [Oral Qualifying Examination](#) by completing the SACS rubric. The Research Proposal will be assessed for its organization, understanding of the relevant literature and pertinent research problem, the hypotheses of the proposed research, the logical arguments and preliminary data supporting the hypotheses, the analysis of

experimental results, and the use of citations, language, and grammar. The Oral Qualifying Examination will cover all aspects of the Research Proposal. In addition, the Oral Qualifying Examination will be assessed for the ability of the student to demonstrate fundamental knowledge of basic chemical engineering principles and aspects related to the research topic, describe the research problem and the methods required, ability to prepare visual aids, clarity of oral presentation, and ability to respond to questions.

Based on the combined performance in the three parts of the Oral Qualifying Examination and the evaluation of the written Research Proposal, the Supervisory Committee will evaluate the overall quality of the Research Proposal as satisfactory or unsatisfactory, and accordingly award a Pass or a Fail grade. A student that does not pass on their first attempt may be allowed a second attempt of the Oral Qualifying Examination on the advice of the Supervisory Committee and discretion of the [Associate Chair for Graduate Studies](#). The retaken exam must take place in the subsequent semester. A student who does not pass the retaken examination will not be allowed to continue in the Ph.D. program and must terminate with a Master's degree or withdraw from the program. In very limited and unusual circumstances, students may request to delay the first or second attempt. Requests to defer the examination must be made through the [Petition](#) process. Students should make every effort to follow the required schedule as exceptions to this rule are extremely rare. **Note: failing to pass the [Candidacy Examination](#) on time may result in the loss of stipend support.**

Doctoral Final Examination

Ph.D. students are required to complete a [Final Examination](#) that includes a written [Doctoral Dissertation](#) and a [Final Oral Defense Examination](#) described below.

MASTER OF SCIENCE PROGRAM REQUIREMENTS

The M.S. program starts with the student taking appropriate coursework to further their understanding of chemical engineering fundamentals in an area of specialization. M.S. students conducting [Research](#) should [Choose a Research Adviser](#) early in the degree plan, especially if they aim to complete a [Master's Thesis](#). The primary role of the [Research Adviser](#) is to train the student in advanced research techniques and methods.

The M.S. degree requires successful completion of a minimum of 30 credits subject to [Course Restrictions and Classifications](#) approved by the Department. The degree program includes 12 credits of [Required Coursework](#) in chemical engineering. M.S. students must then complete at least 3 credits of [Chemical Engineering Electives](#). Any courses listed at 5000 and above within the HWCOE are acceptable for the remaining credits. Students may prepare a [Petition](#) for courses outside the HWCOE. Finally, M.S. students must complete a [Final Examination](#), consisting of either a [Master's Thesis](#) or [Report](#).

Students must maintain an overall, major, and minor GPA of 3.00 (truncated²) at all times. If either the overall, major, or minor GPA drops below 3.00, the student may be denied further registration and the student cannot graduate until the GPA is elevated above 3.00. Any student that does not maintain [Satisfactory Progress](#) in scholarship, research, or academic milestones may be subsequently dismissed from the degree program.

Program Schedule

The minimum requirements for the M.S. program can be met in 1 year following a Bachelor of Science degree. However, many M.S. students choose to complete their degree in approximately 2 years.

² Truncated means that the GPA is not rounded-up, e.g. a 2.99 GPA would not be considered a 3.0.

Training Requirements

All students enrolled in [Research Courses](#) or funded by NSF, NIH, or USDA awards must complete the general [Responsible Conduct in Research \(RCR\) training](#).

M.S. Required Coursework

The chemical engineering coursework required of all M.S. students consists of:

- *Continuum Basis* (ECH 6270)
- *Mathematical Basis* (ECH 6847)
- *Chemical Engineering Kinetics* (ECH 6506) or *Reactor Design and Optimization* (ECH 6526)
- *Advanced Chemical and Biological Processing Lab* (ECH 6937)

M.S. students completing a [Master's Thesis](#) must also take:

- *Molecular Basis* (ECH 6272)

The three Basis courses (ECH 6270, ECH 6272, and ECH 6847) are offered in the Fall semester while *Chemical Engineering Kinetics* (ECH 6506) and *Reactor Design and Optimization* (ECH 6526) are offered in alternating Spring semesters. *Advanced Chemical and Biological Processing Lab* (ECH 6937) is offered at least once each year.

Research and Individual Work Courses

M.S. students may discuss Research and Individual Work opportunities with [Graduate Faculty](#). Only after the consent of a Graduate Faculty member, can an M.S. student register for *Individual Work* (ECH 6905) with that faculty member. Students must discuss the expectations and responsibilities with the faculty member before registering. **All students conducting [Research](#) in a laboratory must be registered for research credits or be employed by the University.** Alternatively, students can enroll in *Individual Work* (ECH 6905) to complete a semester [Internship](#) with a sponsoring company or U.S. government laboratory. **Although students preparing a Master's Thesis may only be registered for a few research credits in a given semester, they are expected to devote their full effort towards their research to continue making [Satisfactory Progress](#).** M.S. students conducting Research and Individual Work are expected to write their final [Report](#) on the Research or Internship activities undertaken during the course.

M.S. Course Restrictions and Classifications

M.S. students should note that there are limitations to the number of credits for many courses, especially [Research and Individual Work Courses](#). M.S. students may register for a maximum of 2 credits of *Departmental Seminar* (ECH 6926). M.S. students may include a maximum of 7 credits of *Individual Work* (ECH 6905) towards their degree. M.S. students completing a [Master's Thesis](#) may register for a maximum of 6 credits of *Research for Master's Thesis* (ECH 6971); however, this course cannot count towards Master's non-thesis degrees. *Advanced Research* (ECH 7979) and *Research for Doctoral Dissertation* (ECH 7980) are not eligible to count toward any Master's degree program. Note that the total credits taken from the *Research for Master's Thesis* (ECH 6971), *Individual Work* (ECH 6905), and *Departmental Seminar* (ECH 6926) cannot exceed 9 credits.

M.S. Final Examination

M.S. thesis students are required to complete a [Final Examination](#) that includes a written [Master's Thesis](#) and a [Final Oral Defense Examination](#). M.S. non-thesis students are required to complete a Final Examination that includes a written [Report](#). Details are described further below.

MASTER OF ENGINEERING PROGRAM REQUIREMENTS

The M.E. program starts with the student taking appropriate [Undergraduate Coursework](#) to attain a comprehensive understanding of chemical engineering principles. M.E. students further this understanding in an area of specialization in chemical engineering. M.E. students conducting [Research](#) should [Choose a Research Adviser](#) early in the degree plan, especially if they aim to complete a [Master's Thesis](#). The primary role of the [Research Adviser](#) is to train the student in advanced research techniques and methods.

The M.E. degree requires successful completion of a minimum of 30 credits subject to [Course Restrictions and Classifications](#) approved by the Department. The degree program includes 12 credits of [Required Coursework](#) in chemical engineering. M.E. students must then complete at least 3 credits of [Chemical Engineering Electives](#). Any courses listed at 5000 and above within the HWCOE are acceptable for the remaining credits. Students may prepare a [Petition](#) for courses outside the HWCOE. Finally, M.E. students must complete a [Final Examination](#), consisting of either a [Master's Thesis](#) or [Report](#).

Students must maintain an overall, major, and minor GPA of 3.00 (truncated³) at all times. If either the overall, major, or minor GPA drops below 3.00, the student may be denied further registration and the student cannot graduate until the GPA is elevated above 3.00. Any student that does not maintain [Satisfactory Progress](#) in scholarship, research, or academic milestones may be subsequently dismissed from the degree program.

Program Schedule

The minimum requirements for the M.E. program can be met in approximately 2 years following a Bachelor of Science degree.

Undergraduate Coursework

The undergraduate chemical engineering coursework required of all M.E. students consists of:

- *Process Thermodynamics (ECH 3101)*
- *Elementary Transport (ECH 3264)*
- *Phase & Chemical Equilibria (ECH 4123)*
- *Separation and Mass Transfer Operations (ECH 4403)*
- *Chemical Engineering Kinetics (ECH 4504)*

Each undergraduate course is offered twice a year. The undergraduate courses do not count as credits towards the degree. The Department recognizes that some disciplines have courses with significant overlap in content with the courses above. Only **students with Certified Degrees in these disciplines** will have the option of taking courses with recognized overlap in content. These courses will be listed on the Acknowledgement of Required Undergraduate Coursework Form given to students during Orientation. Students must sign this form to acknowledge the required Undergraduate Coursework expected for completion of their degree. **No exceptions or [Petitions](#) to waive these required courses will be allowed.**

Training Requirements

All students enrolled in [Research Courses](#) or funded by NSF, NIH, or USDA awards must complete the general [Responsible Conduct in Research \(RCR\) training](#).

³ Truncated means that the GPA is not rounded-up, e.g. a 2.99 GPA would not be considered a 3.0.

M.E. Required Coursework

The chemical engineering coursework required of all M.E. students consists of:

- *Continuum Basis* (ECH 6270)
- *Mathematical Basis* (ECH 6847)
- *Chemical Engineering Kinetics* (ECH 6506) or *Reactor Design and Optimization* (ECH 6526)
- *Advanced Chemical and Biological Processing Lab* (ECH 6937)

The two Basis courses (ECH 6270 and ECH 6847) are offered in the Fall semester while *Chemical Engineering Kinetics* (ECH 6506) and *Reactor Design and Optimization* (ECH 6526) are offered in alternating Spring semesters. *Advanced Chemical and Biological Processing Lab* (ECH 6937) is offered at least once each year.

Research and Individual Work Courses

M.E. students may discuss Research and Individual Work opportunities with [Graduate Faculty](#). Only after the consent of a Graduate Faculty member, can an M.E. student register for *Individual Work* (ECH 6905) with that faculty member. Students must discuss the expectations and responsibilities with the faculty member before registering. **All students conducting [Research](#) in a laboratory must be registered for research credits or be employed by the University.** Alternatively, students can enroll in *Individual Work* (ECH 6905) to complete a semester [Internship](#) with a sponsoring company or U.S. government laboratory. **Although students preparing a Master's Thesis may only be registered for a few research credits in a given semester, they are expected to devote their full effort towards their research to continue making [Satisfactory Progress](#).** M.E. students conducting Research and Individual Work are expected to write their final [Report](#) on the Research or Internship activities undertaken during the course.

M.E. Course Restrictions and Classifications

M.E. students should note that there are limitations to the number of credits for many courses, especially [Research and Individual Work Courses](#). M.E. students may register for a maximum of 2 credits of *Departmental Seminar* (ECH 6926). M.E. students may include a maximum of 7 credits of *Individual Work* (ECH 6905) towards their degree. M.E. students completing a [Master's Thesis](#) may register for a maximum of 6 credits of *Research for Master's Thesis* (ECH 6971); however, this course cannot count towards Master's non-thesis degrees. *Advanced Research* (ECH 7979) and *Research for Doctoral Dissertation* (ECH 7980) are not eligible to count toward any Master's degree program. Note that the total credits taken from the *Research for Master's Thesis* (ECH 6971), *Individual Work* (ECH 6905), and *Departmental Seminar* (ECH 6926) cannot exceed 9 credits.

M.E. Final Examination

M.E. thesis students are required to complete a [Final Examination](#) that includes a written [Master's Thesis](#) and a [Final Oral Defense Examination](#). M.E. non-thesis students are required to complete a Final Examination that includes a written [Report](#). Details are described further below.

FINAL EXAMINATION

The ability to communicate clearly and succinctly with others is an essential skill for a chemical engineer. Therefore, **all graduate students are required to complete a Final Examination for their degree that is to be written primarily by the student.** Ph.D. students must complete a Final Examination that includes a written [Doctoral Dissertation](#) and a [Final Oral Defense Examination](#). M.S. and M.E. thesis students are required to complete a Final Examination that includes a written [Master's Thesis](#) and a Final

Oral Defense Examination. M.S. and M.E. non-thesis students are required to complete a Final Examination that includes a written [Report](#).

Students should note that it is important to satisfy both the regulations of the Graduate School and the Department. The Graduate School regulations primarily focus on the physical form of the Master's Thesis or Doctoral Dissertation. The Graduate School has several guides and templates to help prepare these documents. The Department is responsible for ensuring that the technical content of the written Report, Master's Thesis, or Doctoral Dissertation meet the standards of excellence expected of students seeking an advanced degree.

The format of the written portion of the Final Examination is not fixed. The guidelines must be interpreted as suggestions that may be altered whenever necessary to improve the clarity and legibility of the content. However, graduate students should ensure that any deviations produce a more persuasive and better-structured document.

The Graduate Council requires the Graduate School Editorial Office, as agents of the Dean of the Graduate School, to review the Doctoral Dissertation or Master's Thesis for acceptable format, and to make recommendations as needed. Please consult the [Graduate Catalog](#) for requirements. **Please note that the Graduate School has strict deadlines when applying for graduation, including the submission of the first draft.** Students are encouraged to check the [timeline](#) for the term in which they anticipate completing their degree requirements.

Doctoral Dissertation

Each Ph.D. candidate must prepare and present a Doctoral Dissertation that shows independent investigation that is acceptable in form and content to the [Supervisory Committee](#) and to the Graduate School. The work must be of publishable quality and must be in a form suitable for publication using the Graduate School's format requirements. It is to be **written primarily by the Ph.D. candidate** in consultation with the [Research Adviser](#). **The Ph.D. candidate and Supervisory Committee are responsible for the level of quality and scholarship.**

The Ph.D. candidate, upon completion of other degree requirements and the consent of the Research Adviser, will submit their Doctoral Dissertation to the Supervisory Committee and the Graduate School. **The Doctoral Dissertation should be submitted to the Supervisory Committee members no later than 2 weeks before the [Final Oral Defense Examination](#).**

Master's Thesis

Each M.S. or M.E. student enrolled in the thesis option must prepare and present a Master's Thesis that shows independent investigation that is acceptable in form and content to the [Supervisory Committee](#) and to the Graduate School. The work must be of publishable quality and must be in a form suitable for publication using the Graduate School's format requirements. It is to be **written primarily by the M.S. or M.E. student** in consultation with the [Research Adviser](#). **The M.S. or M.E. student and Supervisory Committee are responsible for the level of quality and scholarship.**

The M.S. or M.E. student, upon completion of other degree requirements and the consent of the Research Adviser, will submit their Master's Thesis to the Supervisory Committee and the Graduate School. The Master's Thesis **should be submitted to the Supervisory Committee members no later than 2 weeks before the [Final Oral Defense Examination](#).**

Master's Report

Each M.S. or M.E. student not enrolled in the thesis option must prepare and present a written Report on a specialized area of chemical engineering. M.S. or M.E. students conducting [Research and Individual](#)

[Work Courses](#) are expected to write their final written Report on the [Research](#) or [Internship](#) activities undertaken during the course.

The Report must outline the area of specialization and its importance, problem statement, background information, results, discussions, and potential future steps. A Report based on Research should also include specific tasks and methods used. A maximum of 15 single-spaced, typed pages, including figures and tables is allowed. A font type of Arial or Times New Roman using a minimum of 11-point should be used for the main text. Captions for tables and figures can use a minimum of a 9-point font. The Report should include a title, a table of contents, references, and an abstract in addition to the 15 pages of text. A maximum of two appendices, such as submitted papers, detailed derivations, etc. could be included in addition to the 15-page Report. Although there is no set format, the main body of the document often includes the following sections:

1. **Introduction:** A concise overview of the research topic and its importance. (Suggested length: 1 – 2 pages)
2. **Background:** Literature review and relevant background needed to place the proposed study in the larger context of the field and to highlight the relevance and novelty of the proposed work. This section should demonstrate the student's ability to read engineering literature critically. (Suggested length: 2 – 3 pages)
3. **Problem description:** A description of the specific problem, objectives of the proposal, and the novelty of the proposed work. This section should demonstrate the student's ability to formulate a problem. (Suggested length: 1 page)
4. **Methods:** A description of the theoretical and/or experimental work. This section should demonstrate the student's ability to solve engineering problems. (Suggested length: 2 – 4 pages)
5. **Results and Discussion:** Description of the results accompanied by an analysis or discussion of the results. This section should demonstrate the student's ability to use the techniques, skills, and modern engineering tools necessary for engineering practice at an advanced level.
6. **Proposed Future tasks:** Details of the potential future research in the same area. This section should demonstrate the student's ability to identify new problems.
7. **Concluding remarks:** A brief summary of the work with details of what new has been accomplished in the student's research.
8. **References:** A list of references cited in the report.
9. **Tables & Figures:** Tables and figures used in the report should be integrated into the text.
10. **Appendices (if needed):** Submitted papers, detailed derivations, detailed experimental protocols.

Final Oral Defense Examination

After submitting the [Doctoral Dissertation](#) or [Master's Thesis](#) to the [Supervisory Committee](#) and completing all other degree requirements contained in this document, graduate students may schedule the Final Oral Defense Examination. The Final Oral Defense Examination should be scheduled no more than 6 months before degree award. The Final Oral Defense Examination shall be publicly announced and held on campus. The Final Oral Defense Examination is a public presentation of the Doctoral Dissertation or Master's Thesis followed by a private examination of the student by the Supervisory Committee. **Students are not expected to provide the Supervisory Committee or audience any food or drinks under any circumstances for the examination.**

The Final Oral Defense Examination will last 2 hours or more and will be divided into two parts.

1. The graduate student will present the Doctoral Dissertation or Master's Thesis in the first part. This part of the exam is public and should last about 30 – 45 minutes.

2. In the last part, the Supervisory Committee will question the graduate student on issues directly related to the Doctoral Dissertation or Master's Thesis. This part of the exam should last about 60 minutes or more. The Supervisory Committee will evaluate the quality of the Doctoral Dissertation or Master's Thesis and the response to questions in order to assess the student's oral communication skills, depth of knowledge in their chosen research field, ability to think critically, and ability to formulate and defend their research.

The Final Oral Defense Examination may be conducted using video and/or telecommunications. However, the graduate student and Chair or Co-Chair must be in the same physical location. All other Supervisory Committee members may participate from remote sites via technological means. If a Supervisory Committee member is unable to attend, students may [Change Supervisory Committee Member](#) if approved by the Department. The substitute Supervisory Committee member should be given sufficient time to read the Doctoral Dissertation or Master's Thesis and prepare for the Final Oral Defense Examination. A minimum of two weeks is recommended.

Assessment of the Final Examination

The [Master's Program Coordinator](#) will assess the written [Final Examination](#) for all non-thesis M.S. and M.E. students. For non-thesis M.S. and M.E. students conducting [Research](#) in the Department, the Master's Program Coordinator may consult with the [Research Adviser](#) about the content and organization. The [Supervisory Committee](#) will assess the written and oral portions of the Final Examination for Ph.D. and Master's students completing a [Master's Thesis](#).

The written portion of the Final Examination will be assessed for its organization, understanding of the relevant literature and pertinent research problem, the analysis of experimental results, and the use of citations, language, and grammar. The oral portion of the Final Examination will be assessed for the ability of the student to demonstrate fundamental knowledge of basic chemical engineering principles and aspects related to the research topic, describe the research problem and the methods required, ability to prepare visual aids, clarity of oral presentation, and ability to respond to questions.

Based on the combined performance of all aspects of the Final Examination, the Supervisory Committee will evaluate the overall quality of the exam as satisfactory or unsatisfactory, and accordingly award a Pass or a Fail grade. A student that does not pass on their first attempt may be allowed a second attempt of the [Final Oral Defense Examination](#) on the advice of the Supervisory Committee and discretion of the [Associate Chair for Graduate Studies](#). The retaken exam must take place in the subsequent semester. A student who does not pass the retaken examination will not be allowed to continue in the Ph.D. program and must terminate with a Master's degree or withdraw from the program. In very limited and unusual circumstances, students may request to delay the first or second attempt. Requests to defer the examination must be made through the [Petition](#) process. Students should make every effort to follow the required schedule as exceptions to this rule are extremely rare. **Note: failing to pass the Final Examination on time may result in the loss of stipend support.**

Satisfactory performance on this examination and adherence to all Graduate School regulations outlined above complete the requirements for the degree. The Supervisory Committee and other designated faculty sign the [Doctoral Dissertation](#) or Master's Thesis signature pages.

Leaving Before Completion of Final Examination

Students may consider leaving the Department to accept employment before their [Master's Thesis](#) or [Doctoral Dissertation](#) is completed and accepted by the Graduate School. However, a graduate student must have completed all other degree requirements and must register for the minimum [Registration Requirements](#)

each semester following departure from campus. Graduate students will be financially responsible for paying the cost of tuition each semester.

REGISTRATION & COURSEWORK

The Department of Chemical Engineering offers an exciting range of graduate courses that encompasses a broad range of topics. The course requirements for graduate students are kept to a minimum so that students have freedom in developing their own programs of study.

Requirements

Registration for all coursework should be done after consulting with the [Graduate Academic Adviser](#) and your [Faculty Academic Adviser](#). All students are urged to complete their coursework as expeditiously as possible. After consulting with your Faculty Academic Adviser, students may consider broadening their education by taking more than the minimum number of courses.

Full-time registration is considered to be 9 to 12 credits in the Fall and Spring semesters. The registration requirement for the Summer C semester is reduced to 6 credits. Registration for fewer than 9 to 12 credits may be considered equivalent to full-time enrollment for an [Internship](#) if approved by the Graduate School prior to the semester. The minimum registration for graduate students is 3 credits in the Fall and Spring semesters and 2 credits in the Summer C semester. International students or students with financial aid or external support may have other requirements to maintain full-time registration.

Ph.D. students with a Graduate Assistantship are required to register for 9 credits in the Fall and Spring semesters and 6 credits in the Summer C semester. Students on appointment are financially liable for credits in excess of the required number. If a student with a Graduate Assistantship drops below the required registration at any time in the semester, the student becomes financially liable for the entire registration. Students who do not register properly are not permitted to remain on appointment.

Registration Process

Students can register for courses at <https://one.uf.edu>. Students need to register on time to avoid unnecessary late registration fees. Registration may be restricted if a student is not maintaining [Satisfactory Progress](#). Ph.D. students with Graduate Assistantships making Satisfactory Progress towards their degree will have their tuition paid by their [Research Adviser](#). However, it is the student's responsibility to make sure that other fees are paid by the fee deadline.

Students must be registered for classes and their fees paid by approximately the second week of the semester. Specific registration and payment deadlines for each semester can be found at <https://catalog.ufl.edu/UGRD/dates-deadlines/>. Students need to pay any fees by the fee payment deadline, even if a tuition waiver has not been processed. Registration holds and late fees can be seen at <https://www.student.ufl.edu>.

A Tuition and Fee Calculator is also provided at <http://www.fa.ufl.edu/bursar/current-students/>.

Course Credit

Courses listed at 5000 and above are considered graduate-level courses limited to graduate students. Courses numbered 7000 and above are designed primarily for Ph.D. candidacy students, who have passed their [Candidacy Examination](#).

In general, graduate courses may not be repeated for additional credit. However, selected courses are designed to be taken multiple semesters. Students should note that some of these repeatable courses are subject to a maximum number of credit hours (see [Course Descriptions](#)).

Master's students can take *Individual Work* (ECH 6905) to conduct research but *Research for Master's Thesis* (ECH 6971) cannot count towards Master's non-thesis degrees. *Advanced Research* (ECH 7979) and *Research for Doctoral Dissertation* (ECH 7980) are not eligible to count toward any Master's degree program.

In order to ensure that a student has comprehensive understanding of the curriculum and their chosen research field, the [Associate Chair for Graduate Studies](#) or [Faculty Academic Adviser](#) may suggest course(s) to enhance this student's education to the benefit of that student and their matriculation and experience through the graduate program. For these select cases, 3000 level courses **outside** of chemical engineering could be potentially credited towards the graduate degree with an approved [Petition](#) prior to enrollment. If a student elects to enroll in an undergraduate course without approval, they may be liable for the fees of the course and it will not count towards their degree.

Course Descriptions

Core Chemical Engineering Courses

ECH 6270: *Continuum Basis of Chemical Engineering (3 credits)* Integrated introduction to transport processes in continuous media with emphasis on fluid mechanics and heat and mass transfer.

ECH 6272: *Molecular Basis of Chemical Engineering (3 credits)* Statistical mechanics and microscopic explanation of macroscopic laws of classical thermodynamics, transport phenomena, and chemical kinetics. Statistical mechanical theories that connect molecular structure to macroscopic properties.

ECH 6506: *Chemical Engineering Kinetics (3 credits)* Fundamental aspects of chemical reactors, including collision theory, transition rate theory, unimolecular rate theory, homogeneous gas and liquid phase kinetics, and heterogeneous kinetics.

ECH 6526: *Reactor Design and Optimization (3 credits)* Fundamentals of heterogeneous reactor design including the characterization of catalytic reactions and support, the development of global rate of the intrinsic reaction affected by chemical and physical deactivation of catalyst, intraphase and interphase mass and heat transfer, and the design and optimization of various types of heterogeneous reactors.

ECH 6847: *Mathematical Basis of Chemical Engineering (3 credits)* Methods of linear systems, chemical engineering applications in finite and infinite dimensional spaces, concepts of stability, application to transport phenomena.

Chemical Engineering Electives

Students may take any [Core Chemical Engineering Courses](#) that are not part of their degree requirements as a Chemical Engineering Elective.

ECH 6326: *Computer Control of Processes (3 credits)* Introduction to digital computers, sampled data systems and Z-transforms, control of multiple input-multiple output systems, optimal control, state estimation and filtering, and self-tuning regulators.

ECH 6709: *Electrochemical Engineering Fundamentals and Design (3 credits)* Fundamentals of electrochemicals and ionics applied to systems of interest in electrochemical engineering.

ECH 6851: *Impedance Spectroscopy (3 credits)* Intended for chemists, physicists, materials scientists, and engineers with an interest in applying electrochemical impedance techniques to study a broad variety of electrochemical processes.

ECH 6937: *Topics in Chemical Engineering I (3 credits; repeatable)* Broad range of advanced chemical engineering topics. Topics often include self-assembly processes, surface science, nanoscale transport, tissue engineering, cell dynamics, complex fluids, catalysis, and pharmaceuticals.

ECH 6937: *Advanced Chemical and Biological Processing Lab (3 credits)* Basic training in polymer, chemical and bio-based processing techniques. The course aims to expand the students' ability in hands-on experiments, report writing, and oral presentation. Upon accomplishing the course, students are expected to have basic technical skills and understanding of physicochemical processes.

Other Approved Chemical Engineering Courses

ECH 6905: *Individual Work (1 – 6 credits; max: 7)* Individual engineering projects suitable for a non-thesis Master of Engineering degree.

ECH 6926: *Graduate Seminar (1 credit; max: 2 for MS/ME)* Develop a diverse and fundamental understanding of chemical engineering principles through invited seminar presentations from experts at UF and other institutions.

ECH 6940: *Supervised Teaching (1 – 5 credits; max 5)* Practicum course to provide students with supervised teaching experience on developing effective instructional methods and materials in engineering education.

ECH 6971: *Research for Master's Thesis (1 – 15 credits; max: 6; S/U)* Research for Master's students approved to complete a thesis.

ECH 7979: *Advanced Research (1 – 12 credits; repeatable; S/U)* Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

ECH 7980: *Research for Doctoral Dissertation (1 – 15 credits; repeatable; S/U)* Research for doctoral students admitted to candidacy.

Course Grades and Grade Point Average (GPA)

The only passing grades for graduate students are A, A-, B+, B, B-, C+, C, and S. All letter graded courses taken as a graduate student are used in calculating the cumulative GPA. Letter grades of C-, D+, D, D- or E are not considered passing at the graduate level, although the grade points associated with these letter grades are included in GPA calculations. Per Graduate School rules, grades earned for undergraduate courses (up to the first 6 credits) will automatically count towards the student's overall GPA, regardless of whether it counts towards their degree. Grade points are not designated for S and U grades and are not used in calculating the GPA; however, a grade I (incomplete) will convert to a 0.0 credit if not changed within 1 semester.

Add/Drop Courses

Courses may be dropped or added during the drop/add period without penalty; however, students with Graduate Assistantships must clear these changes with their [Research Adviser](#) prior to modifications. This period typically lasts five calendar days (two days for Summer sessions) beginning with the first day of the semester (exact dates available on <https://student.ufl.edu>). Classes that meet for the first time after the drop/add period may be dropped without academic penalty or fee liability by the end of the next business day after the first meeting of the class. Note that this does not apply to laboratory sections. After this period, a course may be dropped and a W will appear on the transcript. Students are financially liable for the full

cost (credit and fees) for any course added or dropped after the deadline. This includes students with tuition waivers, as these waivers cannot be used for credit modifications after the drop/add window. If a student on a Graduate Assistantship drops credit(s) that reduce their course load below the enrollment requirements for their appointment, they will be held fully liable for the entire cost of the courses (credit and fees), not just the cost of the dropped credits. Further, their appointment will be automatically terminated, as full-time enrollment is a stipulation of most Fellowship or Graduate Assistantships. Discuss the ramifications of course adjustments with the [Graduate Academic Adviser](#), [Research Adviser](#), [Associate Chair for Graduate Studies](#), and/or Human Resources prior to modifying your course schedule.

Retaking Courses

Graduate students may only retake a non-repeatable course once in which they earn a failing grade. Grade points from both the initial failed attempt and the second attempt are included in computing the GPA. The student receives credit for the satisfactory attempt only.

Transfer of Credits from Other Institutions

Students may [Petition](#) to transfer credits from institutions approved by the University towards their degree requirements. Only graduate-level courses (equivalent to course numbers 5000-7999) with a grade of B or better are eligible for transfer of credit. For Ph.D. students, a maximum of 30 transfer credits are allowed. For M.S. students, a maximum of 9 transfer credits are allowed. Some of these transferred credits may be used to satisfy required coursework. Credits transferred from other institutions are applied toward the degree requirements but grades earned are not computed in the student's GPA. All work, including transferred credits, counted toward the degree must be completed during the seven years immediately preceding the date which the degree is awarded.

A Petition for transfer of credit requires submission of full course materials, including the contact information of the course instructor. Each Petition should be sent to the [Graduate Academic Adviser](#) for review during the first term of enrollment for Master's students and before the third term of enrollment for Ph.D. students. The pertinent course instructor and the [Graduate Program Committee](#) will evaluate the submitted materials. Final acceptance of credit transfers requires approval from the [Associate Chair for Graduate Studies](#) and the Dean of the Graduate School.

Florida State Residency

For tuition purposes, all eligible Ph.D. students (i.e., those who receive tuition waivers and who are U.S. citizens, permanent resident aliens, or legal aliens granted indefinite stay by the Immigration and Naturalization Service) must take appropriate actions to become in-state residents by the end of their first year. Failure to do so may result in loss of the tuition waiver.

OTHER DEGREE OPTIONS

The University of Florida has other degree options to enhance the educational experience of graduate students. Students interested in pursuing these options should discuss them with their [Faculty Academic Adviser](#).

Concurrent Degree

Graduate students who wish to enroll in a concurrent degree program must obtain the appropriate forms from the Graduate School. **The [Associate Chair for Graduate Studies](#) will sign these forms only after consulting the [Department Chair](#) and after the student's [Faculty Academic Adviser](#) has given written**

approval for the student to enroll in the concurrent degree program. A copy of all communications regarding the application for the program will be maintained in the student's graduate records with the [Graduate Academic Adviser](#).

Minor Degree

With the [Supervisory Committee](#) approval, graduate students may choose one or more Minor degrees. Minor work may be completed in any academic unit outside the Chemical Engineering degree if approved for Master or Ph.D. programs in the [Graduate Catalog](#). If a Minor degree is pursued, it must be approved by the minor department and one member of the Supervisory Committee must be from the minor department. If one minor is chosen, the Supervisory Committee member representing the minor suggests 12 to 24 credits of courses numbered 5000 or higher as preparation for an [Oral Qualifying Examination](#). Part of the credits may have been earned while the student was enrolled in a Master's degree program. If two Minor degrees are chosen, each must include at least 8 credits. Competence in the minor is demonstrated by a written examination by the minor academic unit or by the Oral Qualifying Examination, as defined by the established procedures of the minor department. Minor course work at the Ph.D. level may include courses in more than one academic unit if the objective of the Minor degree is clearly stated and the combination of courses is approved by the Graduate School (this approval is not required for a Minor degree in one academic unit).

Certificate Programs

The Graduate Certificate Program is a formal collection of courses that together form a coherent program of study offered through an academic unit. A Graduate Certificate is an academic credential granted by the University of Florida in recognition of the acquisition of knowledge and skills in a given field of study. As such, all Graduate Certificates must follow the requirements of admission, successful completion of approved graduate-level coursework, application to receive the credential, and enrollment during the term in which the certificate is awarded and posted to the transcript. For the list of available Graduate Certificates, please visit the Graduate School's [website](#).

LEAVE POLICY

The Department of Chemical Engineering follows the established policies within the Graduate Assistants United (GAU) Collective Bargaining Agreement (CBA) with the University of Florida. More details can be found at <https://hr.ufl.edu/wp-content/uploads/2018/04/2017-2020-GAU-Union-Contract.pdf>.

Leave of Absence

A Leave of Absence may be granted under extraordinary circumstances and a [Petition](#) must be approved by the [Graduate Program Committee](#) prior to petitioning the Graduate School. Students should ensure that the Graduate Program Committee has sufficient time to evaluate their request prior to any Graduate School deadline.

Personal Time

Following the CBA, personal time is paid up to five days per semester for students on Graduate Assistantships. For complete description of the policies, please review the CBA. The specific dates of absence must be pre-approved by the Ph.D. student's [Research Adviser](#) by signature on the Leave Form, which is to be completed and submitted to the [Graduate Academic Adviser](#). The form includes contact information during the Ph.D. student's absence that must be provided in the event that an emergency should develop.

CHANGES TO YOUR DEGREE PROGRAM

Changes to the Degree Program may have a significant impact on immigration and employment status. It is highly recommended that students discuss any possible changes with the [Associate Chair for Graduate Studies](#) before proceeding.

Petitions

Graduate students are expected to be familiar with the program requirements described in both the [Graduate Catalog](#) and this Handbook. If a student seeks to deviate from any guideline from either document, they must submit a formal Petition to the [Graduate Academic Adviser](#) for a waiver, deferment, or alleviation of consequences associated with that deviation. Note that a Petition must be appropriately justified. Examples of a typical Petition include enrollment of courses outside the HWCOE (in advance of course enrollment); deferment in [Research Proposal](#) or [Oral Qualifying Examination](#); and deferment of [Supervised Teaching](#) requirements.

A Petition must be formally approved prior to enforcement. It is always advisable to request a Petition in advance (prior to the deviation) to avoid consequences if the Petition is denied. When filing any request, graduate students should consult with the Graduate Academic Adviser regarding their academic needs or concerns, as well as to procure the appropriate forms for this formal Petition.

The approval process for the Petition depends on the nature of the request. A Petition to department policies described in this Handbook will be reviewed by the [Associate Chair for Graduate Studies](#) directly or sent to the [Graduate Program Committee](#) for full committee vote. For deviations from Graduate School guidelines, Petition requests are more stringent and must be approved first by the Department, then HWCOE, and then the Graduate School. Note that the Graduate School rarely permits guideline deviations and only under extraneous circumstances. Furthermore, some guidelines (e.g., graduation, GPA requirements, and total credit hour requirements) cannot be petitioned.

Change from Ph.D. to M.S. Degree Plan

Graduate students originally admitted to the Ph.D. program may wish to change their trajectory towards a M.S. degree. If the student wishes or needs to leave before the completion of the Ph.D. degree and meets the requirements for the M.S. degree set by the Department and Graduate School, then the decision to grant a M.S. degree will be made in mutual agreement between the student and the [Research Adviser](#).

Change or Continuation from M.S. to Ph.D. Degree Plan

M.S. students who demonstrate exceptional understanding of chemical engineering fundamentals and outstanding progress in research achievements may advance to the Ph.D. program when there are available opportunities. Typically, M.S. students are admitted to the Ph.D. program to continue conducting [Research](#) with the same [Research Adviser](#). However, M.S. students may seek a new Research Adviser for their Ph.D. degree requirements. To be considered for the Ph.D. program, M.S. students are encouraged to re-submit their application materials directly to the [Ph.D. Recruitment Coordinator](#) before December 5, but after completion of the three Basis courses (*Continuum Basis*, *Molecular Basis*, and *Mathematical Basis*). Applications will be considered against those of the other new Ph.D. applicants and decisions will be made based on student credentials and the projected number of available projects. In addition to the typical credentials for admission (undergraduate GPA, GRE, etc.), the [Graduate Admissions Committee](#) will consider performance in the M.S. program and recommendations from [Chemical Engineering Faculty](#).

Change from Non-Thesis to Thesis Degree Plan

All M.S. and M.E. students are admitted to the non-thesis program. Students with a strong interest in conducting [Research](#) may choose to complete a [Master's Thesis](#) for their degree. Once a [Research Adviser](#) has agreed to mentor your Master's Thesis, contact the [Graduate Academic Adviser](#) to transfer to the Thesis program.

Change from Thesis to Non-Thesis Degree Plan

M.S. and M.E. students may choose to covert back from the [Master's Thesis](#) to the non-thesis option upon approval of the [Research Adviser](#). A maximum of 3 credits earned with a grade of S in *Research for Master's Thesis* (ECH 6971) can be counted toward the degree requirements only if converted to credit as A, A-, B+, or B in *Individual Work* (ECH 6905). The [Supervisory Committee](#) must indicate that the work was productive in and by itself and that the work warrants credit as a special problem or special topic course.

Continuation from M.E. to Ph.D. Degree Plan

M.E. students who intend to apply to the Ph.D. program must (without exception) complete the [Undergraduate Coursework](#) requirements before they receive funding and begin their doctoral program requirements. Such students are strongly advised to adhere to the suggested program of study given above. Typically, M.E. students are admitted to the Ph.D. program to continue conducting Research with the same [Research Adviser](#). However, M.E. students may seek a new Research Adviser for their Ph.D. degree requirements. To be considered for the Ph.D. program, M.E. students are encouraged to re-submit their application materials directly to the [Ph.D. Recruitment Coordinator](#) before December 5, but after completion of the three Basis courses (*Continuum Basis*, *Molecular Basis*, and *Mathematical Basis*). Applications will be considered against those of the other new Ph.D. applicants and decisions will be made based on student credentials and the projected number of available projects. In addition to the typical credentials for admission (undergraduate GPA, GRE, etc.), the [Graduate Admissions Committee](#) will consider performance in the M.E. program and recommendations from [Chemical Engineering Faculty](#).

Change Research Adviser

Sometimes [Research](#) does not proceed according to the expectations of the student, the [Research Adviser](#), or both. Rare situations may arise where a student wishes to change the research group due to irreconcilable personality conflicts with the Research Adviser or differences in opinion about the overall research direction.

Changing Research Adviser is an important decision that can significantly impact your academic progress as well as the Research Adviser's research program. Early recognition of the possibility of switching topics and/or Research Adviser is an important factor in successfully managing this process. The best approach to accomplish this task is to adopt an attitude of respect and professional courtesy to your Research Adviser. Students should notify their Research Adviser of their desire to change research groups as soon as possible. **Unless conduct is a factor, the student should make an effort to work through differences with their Research Adviser and explore possible options for addressing the student's concerns and reconciliation before making a final decision.**

Students are encouraged to seek advice from a peer or the [Associate Chair for Graduate Studies](#) to assess your needs and determine whether a different Research Adviser would be good for you, particularly if you are attempting to change Research Adviser towards the final phase of your degree program. However, it is inappropriate for the student to speak to other [Chemical Engineering Faculty](#) members about the situation or their intention prior to consultation with the Research Adviser or the Associate Chair for Graduate Studies.

If the student and Research Adviser are in mutual agreement that a change of research group is appropriate, the student should contact the Associate Chair for Graduate Studies for consultation and assistance. The process for changing Research Adviser depends on the degree program.

Master's Students

If Master's students have appointed positions, they must follow the procedure outlined for Ph.D. Students. Otherwise, Master's students should work with the [Research Adviser](#) to prepare a [Transition Plan](#) before finalizing a change in Research Adviser.

Ph.D. Students

Most Ph.D. students are financially supported by research grants secured by the [Research Adviser](#). Since the research grant has a fixed duration, changing the assigned student in the middle of the project may have negative impacts on the student, the specific project, the Department, and the University. For this reason, the Ph.D. student is expected to take ownership of the project and make the best effort to complete the project before they move to another project. The Department does not have a budget to support students, which is why the student signs a Letter of Appointment (LOA) as a contract to work for their Research Adviser for that semester. Therefore, the student should make every effort to continue to work in the laboratory of their Research Adviser until the end of the semester. Students should note that leaving a Research Adviser before a formal transition may jeopardize their stipend and the student may be responsible for the entire cost of tuition during the semester. If the student and Research Adviser have attempted reconciliation and have a mutual agreement that a change is appropriate, they should begin developing a [Transition Plan](#). If the student and Research Adviser are unable to reach an agreement, the student should meet with the [Associate Chair for Graduate Studies](#), who will help develop a Transition Plan to bring the ongoing research efforts to a reasonable state of completion.

Transition Plan

The student and [Research Adviser](#) should discuss and arrange a timeframe for completing any remaining work before the change of Research Adviser takes place. Students are reminded to be professional at all times during the transition period. Avoid doing or saying anything that could have negative ramifications for your future. The Transition Plan should include an agreement about the remaining financial responsibility of the Research Adviser if appropriate.

After the Transition Plan is implemented, the [Associate Chair for Graduate Studies](#) will work with the student in identifying a new Research Adviser. When talking with a potential Research Adviser, it is recommended that students focus discussions on their interests and goals and not on negative incidents or difficulties. In all cases, it is the student's responsibility to meet with interested faculty members to try to identify a new Research Adviser. If the student cannot find a faculty member willing to serve as their Research Adviser, the student will need to consider other options, including the pursuit of a graduate degree in another program.

After students have identified a new Research Adviser and brought their prior research to a reasonable state of completion, students should complete or update any paperwork that contains information about their Research Adviser.

Change Supervisory Committee Member

Graduate students may seek to change an existing [Supervisory Committee](#) member. Students should consult with their [Research Adviser](#) and the [Graduate Academic Adviser](#) about the change. Changes to a

student's committee are allowed until the midpoint of the term of degree award if the defense has not occurred. No changes are allowed after the defense.

MAINTAINING SATISFACTORY PROGRESS

A student is considered to be making Satisfactory Progress by the Department if they have (i) maintained scholarship and (ii) satisfactorily completed all degree requirements consistent with their time in the program. Ph.D. students and Master's students completing a thesis are expected to conduct research as part of their degree requirement. Therefore, Ph.D. students and Master's students completing a thesis must also demonstrate that they have (iii) achieved acceptable progress in research. Every student is expected to make Satisfactory Progress toward graduation each semester, including the timely passing of academic milestones expected during that semester, paying all fees and registering each semester, and adhering to and promoting all aspects of the [Student Honor and Conduct Code](#).

Satisfactory scholarship is defined as the ability to (i) maintain an overall, major, and minor GPA of 3.00 (truncated⁴) or greater; (ii) complete all required courses with the required letter grade defined in the degree plan; and (iii) adhere to all aspects of the Student Honor and Conduct Code. If either the overall, major, or minor GPA drops below 3.00, the student may be **denied** registration and the student cannot graduate until the GPA is elevated above 3.00. A violation of any ethical, moral, or professional standard is regarded as a serious offense. Any conduct offenses may result in academic sanctions, including suspension or dismissal by the Department and/or the Graduate School.

Graduate students in chemical engineering are expected to meet the criteria and timeframes listed in the Degree Requirements Section. The established timeframes take into account the effect of all aspects of the program on the rate of completion. Unapproved delays in meeting academic milestones, as defined by their specific degree, may jeopardize Satisfactory Progress, including the following milestones:

- Identification of a [Research Adviser](#) to mentor the student's research;
- Inability to pass or maintain required training certifications;
- Formation of a [Supervisory Committee](#);
- Inability to pass the [Candidacy Examination](#);
- Submission of [Progress Reports](#);
- Presentation of the [Research Seminar](#); and
- Inability to pass the [Final Examination](#);

Without an approved [Petition](#), students must resolve a delay in any academic milestone by the semester following its anticipated completion to be considered by the Department as making Satisfactory Progress.

Acceptable progress in research is determined by the Research Adviser and should be based on the student meeting expectations and performing tasks that the Research Adviser communicates to the student. Students are also expected to conduct their research according to all safety standards. Lack of research progress or any disregard for safety protocols is demonstrated via an unsatisfactory (U) grade earned in research coursework. Students with Graduate Assistantships will also receive an unsatisfactory performance evaluation on their Letter of Appointment (LOA) for the next semester.

Communication between the Research Adviser and student as well as documentation of expectations and performance are very important to maintaining Satisfactory Progress in research. Students are encouraged to meet regularly with their Research Adviser to discuss:

⁴ Truncated means that the GPA is not rounded-up, e.g. a 2.99 GPA would not be considered a 3.0.

- Short and long-term research objectives for the project. Short-term objectives should indicate tasks that the student should accomplish in a given time period, such as an academic semester. Long-term objectives should describe specific dates to be accomplished. At the end of a semester, students should discuss their performance evaluation and expectations for the next semester.
- Expectations and objectives in writing publications, preparing research reports to funding agencies, and delivering presentations at conferences.
- Duties associated with the management of the research group, including lab manager, safety manager, website designer, etc.

A student whose research performance is determined to be unsatisfactory will receive written documentation from their Research Adviser listing all deficiencies and/or outlining the level of performance required to continue working with the Research Adviser. Students will be given a reasonable time limit to complete the expected work. A copy of the written documentation will be provided to the [Associate Chair for Graduate Studies](#) for inclusion in the student's file. The deficiencies must be remedied before the stated timeframe in the documentation in order to maintain Satisfactory Progress.

Any graduate student that has not maintained Satisfactory Progress for two terms may be denied further registration and subsequently dismissed from the degree program by the Department of Chemical Engineering, HWCOE, or the Dean of the Graduate School. Students with Graduate Assistantships may have additional consequences, including dismissal from the group of the Research Adviser and/or loss of their stipend, tuition, and healthcare benefits. These consequences apply even if the student's GPA meets or exceeds the minimum set by the Department or Graduate School.

GRADUATE STUDENT WELLNESS SERVICES

Graduate students may experience health problems (sickness, injury, mental health, etc.), legal problems, or upsetting major life events, such as the death of a family member, during graduate school. Students may also struggle to cope effectively with the stresses encountered in graduate school. The University of Florida has numerous resources to help students with these stressful situations, including:

- **GatorWell:** Graduate student wellness encompasses 8 dimensions, including physical, emotional, intellectual, spiritual, environmental, occupational, financial, and social wellness. The GatorWell website (http://gatorwell.ufsa.ufl.edu/health_topic/8-dimensions-of-wellness) includes resources and services specific to students.
- **UF Health Wellness:** GatorCare (<http://gatorcare.org/wellness/>) provides numerous resources to help employees, including Graduate Assistants, with all aspects of wellness.
- **U Matter, We Care:** If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out.
- **Counseling and Wellness Center:** Visit <http://www.counseling.ufl.edu/cwc> or call 352-392-1575 to schedule an appointment.
- **Sexual Assault Recovery Services (SARS):** Report any incidences or seek help at the Student Health Care Center or call 352-392-1161.
- **University Police Department:** Dial 9-1-1 for emergencies or call at 352-392-1111 to discuss any other matters.
- **Associate Chair for Graduate Studies:** Students are welcome to meet with the [Associate Chair for Graduate Studies](#) for any reason, especially if they are unsure on how or where to get the services they need.

In addition, graduate students are encouraged to reach out to the **National Graduate Crisis Line** (<http://gradresources.org/category/national-grad-crisis-line/> or 1-800-GRAD-HLP). This non-profit center is available 24/7 and specifically accommodates graduate students in crisis. This organization is committed to supporting the emotional and spiritual needs of graduate and professional students across the United States and around the world so they can pursue their purpose with passion and determination.

In some cases, these situations may be so significant that it prevents a student from making [Satisfactory Progress](#) in classes or research. In these extreme cases, students may consider a [Leave of Absence](#). Students should discuss a Leave of Absence candidly with their [Research Adviser](#), the [Associate Chair for Graduate Studies](#), and/or the Dean of Students Office.

INTERNSHIPS

The Department does not have a formal Internship program but many students often gain practical experience by working with a sponsoring company or U.S. government laboratory. Students are encouraged to take advantage of Internship opportunities if it enhances a student's research or enriches the student's graduate education in some other specific manner.

Planning for an Internship should be done with the full knowledge and cooperation of the [Faculty Academic Adviser](#). Students should plan Internships to start and end in concurrence with either Fall, Spring, or Summer semester starting and ending dates. If a student starts or ends an Internship after a semester has started, it is generally not possible to pay the student as a Graduate Assistant during that semester. Thus, it is very important to plan Internships in advance and make every effort to have them coincide with the semester start and end dates.

Students may receive credit for an Internship by registering for *Individual Work* (ECH 6905). Students with a Graduate Assistantship need to have permission from their [Research Adviser](#) before the start of the Internship. These students should also contact Human Resources for information on how an Internship may affect their stipend, tuition, and healthcare benefits. The [Associate Chair for Graduate Studies](#) will review these requests. The [Graduate Academic Adviser](#) will register students for the course.

International students should note that employment for F-1 and J-1 students is limited and working without permission is a violation of status and a deportable offense. Curricular Practical Training (CPT) instructions and registration requirements can be found at <http://www.ufic.ufl.edu>. Note that F-1 students will be responsible for course registration during the semester working under CPT as well as tuition payment.

FINAL TERM

Students are responsible for meeting all requirements and observing every deadline. Specific deadlines are published each semester in the Graduate Student Handbook and online at the Graduate School website. **Rules for graduation are not waived for ignorance.**

All students must submit a Degree Application on ONE.UF before the published deadline of the term. Degree Applications do not carry over from one semester to the next. If the degree is not awarded, the student must (i) request that the Department remove their name from the current term degree list; (ii) re-apply for the degree award via ONE.UF in a subsequent term by the published deadline for that term; and (iii) meet all other requirements for the term in which the degree will be awarded. These requirements also apply when a thesis or dissertation student has been approved to [Clear Prior](#) by the Graduate School Editorial Office.

All students must also meet the minimum [Registration Requirements](#) for the term in which the degree will be awarded. During this term, the student must be registered for at least 3 credits in the Fall or Spring semesters and at least 2 credits in the Summer semester. These credits must count towards the specific degree. M.S. or M.E. students completing a [Master's Thesis](#) are required to take *Research for Master's Thesis* (ECH 6971) in their final term. Ph.D. students are required to take *Research for Doctoral*

Dissertation (ECH 7980) in their final term. This minimum final term registration is applicable to all graduate students and the Graduate School will not accept a [Petition](#) to this policy. Note that students receiving Fellowships, Graduate Assistantships, or Financial Assistance may be required to register for more than this minimum number of credits.

All work for the Ph.D. degree must be completed within 5 calendar years after the [Candidacy Examination](#). Failure to complete the degree requirements within this timeframe requires the [Oral Qualifying Examination](#) to be repeated. There must be at least 2 terms between the Candidacy Examination and the date of the degree.

All graduate students should also note that graduate degrees are not awarded to students with incomplete letter grades on their transcripts or an overall, major, and minor GPA below 3.00 (truncated⁵).

When the thesis or dissertation is in final form for submission to the Graduate School, the student should review the format requirements of the Graduate School Editorial Office and should work with the Application Support Center to format the document in order to meet the minimum submission requirements of the Editorial Office. The Application Support Center assists students with troubleshooting their documents free of charge. The Center also provides more extensive formatting and pdf-conversion services for reasonable fees to the student. It is highly recommended that all students writing theses and dissertations use their services, in order to alleviate some of the stress felt during the approval process.

Once graduate students have completed their degree requirements, they should work with their [Research Adviser](#) to bring all research to a reasonable state of completion, including training of other graduate students, handing over all research notebooks and data to the Research Adviser, disposing of unneeded samples, and cleaning of any laboratory and/or office space assigned to the student. Any office keys must be returned to the Main Office of the Chemical Engineering Department.

Clear Prior

Ph.D. and M.S. or M.E. thesis students who complete all graduate degree requirements during a given semester, but narrowly miss the Final deadline specified by the Graduate School, may receive their degree in the following semester and avoid the minimum [Registration Requirements](#). Students must notify the [Graduate Academic Adviser](#) of their intention to Clear Prior before the start of the subsequent semester. Note that Clear Prior can be granted only if all degree requirements have been satisfied during or prior to the registration phase of the graduating semester. Students can [Petition](#) to participate in a graduation ceremony even if all of the requirements for the degree have not yet been completed, provided the [Associate Chair for Graduate Studies](#) expects completion of all requirements in the near future. Please see the [Graduate Catalog](#) for specific information on Clear Prior deadlines and terms.

⁵ Truncated means that the GPA is not rounded-up, e.g. a 2.99 GPA would not be considered a 3.0.