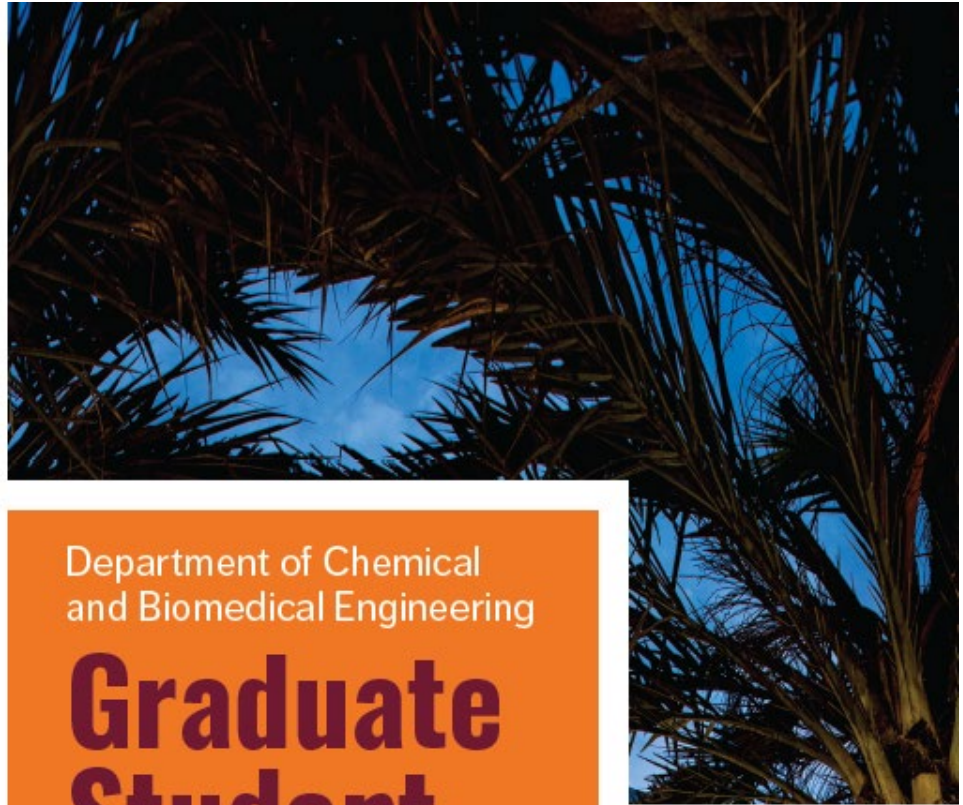
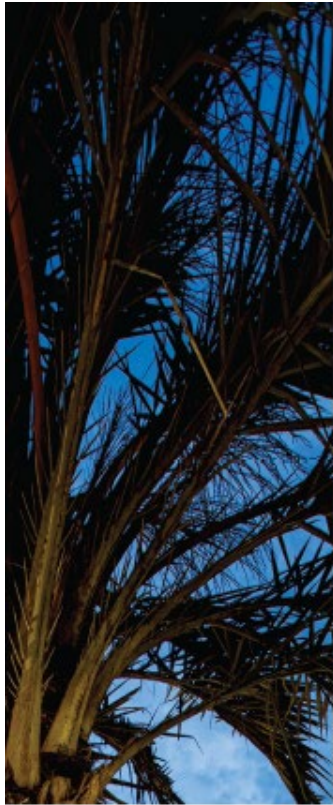




Department of Chemical
and Biomedical Engineering

Graduate Student Handbook

2026-2027



FAMU-FSU
College of Engineering



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1 Background

The Florida A&M University-Florida State University (FAMU-FSU) College of Engineering is a joint college that serves Florida A&M University, which is a historically black institution founded in 1887, and the Florida State University, which traces its history back to 1851. Established in 1982 and located in Tallahassee, Florida, the mission of the FAMU-FSU College of Engineering is as follows: to provide an innovative academic program of excellence at the undergraduate and graduate levels, as judged by the highest standards and recognized by national peers; to attract and produce greater numbers of women and minorities in professional engineering, engineering teaching, and engineering research; and to attain national and international recognition of the College through educational and research achievements and professional service of its faculty and students. The FAMU-FSU College of Engineering has an enrollment of more than 2700 undergraduate students and approximately 550 graduate students.

The Department of Chemical & Biomedical Engineering is committed to providing a high quality and modern education in the fundamental principles and practices of chemical and biomedical engineering. The fundamental unifying theme of chemical engineering is the study of multicomponent multiphase systems at both the molecular and macroscopic scale with particular emphasis on processes with chemical transformation, *i.e.*, chemical reaction. The biomedical engineering emphasis in CBE builds upon the chemical engineering strength and is focused on cellular and biochemical transformations in natural and synthetic environments. An integral part of the education process involves faculty and students conducting groundbreaking and innovative research in areas of critical importance to society. CBE seeks to prepare students for academic and professional work through classroom and laboratory instruction and research with modern experimental, mathematical and computational tools.

The vision of the Department of Chemical & Biomedical Engineering is to serve the state and nation by providing a leading educational and research program in chemical and biomedical engineering. We aim to capitalize on the fundamental strengths of (a) chemical engineering in the study and application of multi-component, multiphase transport and reaction processes and (b) biomedical engineering in the study of cellular, biochemical, materials, processes, instrumentation and signal analysis to make innovative and creative advances that address pressing societal problems in human health, environment and industry.

1.1 Degrees Offered

The Department of Chemical & Biomedical Engineering offers graduate programs leading to the following degrees:

- Master of Science (M.S.) in Biomedical Engineering
 - Thesis Option
 - Course-Based (Non-Thesis) Option
- Master of Science (M.S.) in Chemical Engineering
 - Thesis Option
 - Course-Based (Non-Thesis) Option
- Doctor of Philosophy (Ph.D.) in Biomedical Engineering
- Doctor of Philosophy (Ph.D.) in Chemical Engineering

The CBE graduate program conducts research in the following areas:

Advanced Materials

Focus Areas: Additive manufacturing, biomaterials, complex fluids and colloids, electrochemical materials, nanocomposites, polymers, superconductors and semiconductors, quantum materials

Energy, Environment, and Sustainability

Focus Areas: Energy generation and storage, electrocatalysis, reaction engineering, magnetic field-assisted separations, membrane separations, recyclable plastics, plasma chemical engineering

Life and Health

Focus Areas: Molecular, cellular, and tissue engineering, regenerative medicine, bioimaging and spectroscopy, nanomedicine

Theory, Computation, and Artificial Intelligence

Focus Areas: Machine learning, molecular dynamics, Monte Carlo simulations, multiscale modeling, neural networks

1.2 Graduate Program Objectives and Outcomes**1.2.1 Program Objective:**

To provide the highest quality advanced biomedical & chemical engineering educational and research opportunities for graduate students, and advance statewide, national and international reputations for excellence in engineering education and research.

1.2.2 Educational Outcomes:

Upon graduation, biomedical & chemical engineering students will have acquired the following skillset:

1.2.2.1 Written and Oral Communication Skills:

The successful student demonstrates oral and written communication skills in the technical aspects of biomedical/chemical engineering.

1.2.2.2 Analysis of Literature:

The successful student can analyze pertinent literature critically and fully and determine state-of-the-art in each topic.

1.2.2.3 Critical Thinking Skills:

The successful student demonstrates critical thinking skills and theoretical abilities in the field of biomedical/chemical engineering.

1.2.2.4 Solve Chemical/Biomedical Engineering Problems Using Computational & Experimental Skills:

The successful student can solve biomedical/chemical engineering problems using simulations, experimental techniques, molecular and continuum theories, etc.

1.2.2.5 Creative thinking and justification of hypotheses:

The successful student will be able to conduct creative research that addresses identified challenges with well-justified hypotheses.

2 Admissions Requirements

Individuals seeking admission to graduate study within the Department of Chemical & Biomedical Engineering (CBE) must meet the criteria set by both the university and department. The following sections detail the admission requirements as set by the Department. Applicants should note that the Graduate Offices at both FAMU and FSU have additional requirements including application fees. Information on FAMU admission requirements may be found at [FAMU Application Site](#) and FSU admission requirements may be found at [FSU Office of Admissions website](#). Due to the College is jointly administered by FAMU and FSU, applicants may apply for the CBE graduate program through either University depending on individual circumstances or preferences.

For Ph.D. degrees, we only have fall semester admission, application must be completed by the deadlines set by the department are as follows below to be considered:

Decision Type	Deadline
Early Admission	1 December
Full Funding Consideration	15 January
Regular Domestic (USA) Student	1 May

- International Applicants living outside of the United States are highly encouraged to apply by January 15 for the Fall semester.

For M.S. degrees, M.S. thesis only has fall admission and the application deadline is July 1st. M.S. non-thesis has admissions for spring, summer and fall terms, and their deadlines are November 1st, March 1st and July 1st, respectively

CBE primarily admits new graduate students to start in the Fall semester. Under special and unique conditions, new graduates may be admitted beginning in the Spring and Summer semesters, but only with prior communication with the department. The universities will not accept any Ph.D. applications after the May 1st deadline for fall admission. CBE advises that applications and all supporting documents must be submitted well in advance of these department deadlines, especially for applicants interested in financial support (including stipends, tuition and health insurance subsidy). In addition to the admission requirements of each University, a candidate for post-baccalaureate study in CBE also must meet the following requirements based on the intended degree. Please visit the [department's website](#) to review the admission requirements for each graduate program.

2.1 Master of Science (M.S.) Program (Thesis or Non-Thesis)

Under the disciplines of biomedical engineering or chemical engineering, the Master of Science (M.S.) degree has two options. The thesis M.S. option has a research component and requires completion of a thesis, and admission to the thesis option is available only for the fall semester. The course-based(non-thesis) M.S. option requires only successful completion of coursework, and it has spring, summer and fall admissions. CBE admission requirements for the M.S. degree program are as follows:

- A baccalaureate degree in chemical/biomedical engineering or an allied field from an accredited college or university. Depending on the student's academic background certain undergraduate classes might have to be taken to prepare the student for success in a chemical/biomedical

engineering curriculum.

- An undergraduate upper-division or graduate GPA of 3.0 (on a 4.0 scale) or higher.
- The GRE requirement has been waived (and extended) for all engineering master's applicants.
- CV/Resume - Information should be current.
- Statement of Purpose – outlining your research and career goals. We want to know how your background and prior training make you the right candidate and why FAMU-FSU College of Engineering is a good fit for you.
- Two Letters of Recommendation –Two signed letters of recommendation on official letterheads, from academic or professional references who can comment on the academic and/or research potential of the applicant.
- Credit Requirements
 - International Credit Requirements — International applicants or degrees earned from international institutions must submit official transcripts through a NACES approved evaluator. We recommend using SpanTran for your course-by-course evaluation. We are unable to review applications with unofficial transcripts from international institutions. The University will not waive this requirement. For more information visit [FSU Graduate School](#) or [FAMU Graduate School](#).
 - US Credit Requirements — Credits earned from US institutions can be reviewed with unofficial transcripts.
- For International students, an English Proficiency Score Report is required if:
 - The applicant's country's official language is NOT English or
 - The applicant did NOT graduate from an accredited US institution with either a bachelor's or master's degree.
 - The following are the minimum scores required for admission to the University:
 - Internet-based TOEFL ([IBTOEFL](#)): 80
 - Paper-based TOEFL ([TOEFL](#)): 550
 - International English Language Testing System ([Academic IELTS](#)): 6.5
 - Pearson Test of English ([PTE](#)): 55
 - [Duolingo](#): 120 (FAMU)/125(FSU)
 - [Cambridge C1 Advanced Level](#): 180
 - [Michigan Language Assessment](#): 55

Students who do not possess a bachelor's degree in biomedical or chemical engineering may be required to complete a department-designated sequence of undergraduate courses with a grade of "B" or higher in each course. Transfer credit from another institution is limited to six (6) hours with departmental approval. Typical undergraduate course sequences (in preparation for graduate courses) can be found on the department [admission website](#).

2.2 Ph.D. Degree

CBE offers degrees in both biomedical engineering and chemical engineering. Applicants may enter either discipline with either a B.S. or M.S. degree, with the latter typically earning some transfer of credit towards the terminal degree (discussed later). Admissions requirements for the Ph.D. program is as follows:

- A baccalaureate degree in chemical/biomedical engineering or an allied field from an accredited college or university. Depending on the students' academic background certain undergraduate

classes might have to be taken to prepare the student for success in a chemical/biomedical engineering curriculum.

- An undergraduate upper-division GPA or graduate GPA of 3.0 (on a 4.0 scale) or higher.
- A recommended Graduate Record Examination General Test (GRE) score of a minimum GRE percentile of at least 48% on the verbal portion and 75% on the quantitative portion of the test. However, the decision to admit will be based on a prospective student's entire application package. Note: The GRE percentiles of funded graduate students on assistantship are typically higher than these minimum. However, Ph.D. applicants may obtain a GRE waiver if two or more of the following requirements are met. To be considered for a GRE waiver, [the online approval form](#) must be completed.
- CV/Resume - Information should be current.
- Statement of Purpose – outlining your research and career goals. We want to know how your background and prior training make you the right candidate and why FAMU-FSU College of Engineering is a good fit for you.
- Two Letters of Recommendation – Two signed letters of recommendation on official letterheads, from academic or professional references who can comment on the academic and research potential of the applicant.
- Credit Requirements
 - International Credit Requirements — International applicants or degrees earned from international institutions must submit official transcripts through a NACES approved evaluator. We recommend using SpanTran for your course-by-course evaluation. We are unable to review applications with unofficial transcripts from international institutions. The University will not waive this requirement. For more information visit [FSU Graduate School](#) or [FAMU Graduate School](#).
 - US Credit Requirements — Credits earned from US institutions can be reviewed with unofficial transcripts.
- For International students, an English Proficiency Score Report is required if:
 - The applicant's country's official language is NOT English or
 - The applicant did NOT graduate from an accredited US institution with either a bachelor's or master's degree.
 - The following are the minimum scores required for admission to the University:
 - Internet based TOEFL ([IBTOEFL](#)): 80
 - Paper based TOEFL ([TOEFL](#)): 550
 - International English Language Testing System ([Academic IELTS](#)): 6.5
 - Pearson Test of English ([PTE](#)): 55
 - [Duolingo](#): 120 ([FAMU](#))/125([FSU](#))
 - [Cambridge C1 Advanced Level](#): 180
 - [Michigan Language Assessment](#): 55

Students with a M.S. Thesis degree in biomedical or chemical engineering from the FAMU-FSU College of Engineering may, with approval of the graduate committee and Major Professor (Faculty Advisor), take six (6) additional approved semester hours beyond the M.S. requirements to satisfy the 30-hour course requirement for the Ph.D. All other requirements must be fulfilled as stated below. Students with M.S. degrees from other institutions will be given a specific course plan by the departmental graduate committee.

Students who do not possess a bachelor's degree in biomedical or chemical engineering may be required to complete a department-designated sequence of undergraduate courses with a grade of "B" or higher in each course. Transfer credit from another institution is limited to six (6) hours with departmental approval. Typical undergraduate course sequences (in preparation for graduate courses) can be found on the [department admission website](#).

2.3 B.S.-M.S. Pathway Application Requirements and Procedure

CBE has implemented a [Bachelor of Science and Master of Science \(B.S.-M.S.\) pathway](#) based on the existing bachelor's and Master's of Science degree programs that cover the areas of Chemical and Biomedical Engineering. The Department wants to allow academically talented students to obtain both a BS and M.S. degree in a shorter time span, while still producing engineers that are fully qualified to enter professional practice in industry. This program is designed for students pursuing an undergraduate degree in Biomedical or Chemical Engineering, who also wish to obtain a graduate degree in either Biomedical or Chemical Engineering. Well-qualified students who have have a GPA of 3.0 or better in engineering studies are invited to apply for the program during the spring semester of their junior year of the program. Students who have graduated by this pathway have successfully been able to find jobs or have pursued advanced degrees in Chemical Engineering, Materials Engineering, Biomedical Engineering, Medicine, Business, Patent Law and other related fields.

2.3.1 Application Requirements

Students interested in the B.S.-M.S. Pathway should begin the application process during the spring semester of their junior year by meeting with their undergraduate academic advisor to determine eligibility.

To be eligible for admission to the B.S.-M.S. Pathway, students must:

- Be currently enrolled as an undergraduate student in the Department of Chemical and Biomedical Engineering.
- Be in the junior year of the undergraduate program
- Have a minimum 3.0 GPA with University GPA, Cumulative(overall) GPA and Department (CBE) GPA.
- Meet with their undergraduate academic advisor to discuss eligibility and program requirements.
- Submit a departmental B.S.-M.S. Pathway application for review and approval.

2.3.2 Program Requirements

After acceptance into the B.S.-M.S. Pathway, students must:

- Maintain a minimum cumulative 3.0 GPA.
- Satisfy all undergraduate degree requirements.
- Complete the University's regular graduate admissions process before entering the M.S. program.
- Meet all Graduate School admission requirements in effect at the time of graduate application.

While enrolled in the B.S.-M.S. Pathway, a senior undergraduate student may enroll in graduate courses for dual undergraduate and graduate credit provided that the student:

- Has earned a departmental GPA of at least 3.0 ("B").

- Enroll in no more than 15 semester credit hours during the semester in which graduate coursework is taken.

Upon admission to the M.S. program, up to twelve (12) semester credit hours of approved graduate coursework completed through the B.S.-M.S. Pathway may be applied toward the master's degree. These courses may be counted toward both the B.S. and M.S. degrees as permitted by university policy.

2.3.3 Tuition Waiver

The FAMU-FSU College of Engineering provides a tuition waiver that covers the graduate tuition differential for up to twelve (12) semester credit hours of approved graduate coursework taken through the B.S.-M.S. Pathway. Eligible students pay the undergraduate tuition rate for these approved dual-counted graduate courses, provided they continue to meet all program eligibility requirements.

2.3.4 Important Notes

- The B.S.-M.S. Pathway is available only to currently enrolled undergraduate students in the Department of Chemical and Biomedical Engineering.
- Admission to the B.S.-M.S. Pathway does not constitute admission to a graduate degree program.
- Students accepted into the B.S.-M.S. Pathway must complete the standard graduate admissions process and satisfy all Graduate School and departmental admission requirements before matriculating into the M.S. program.

Participation in the B.S.-M.S. Pathway does not guarantee admission to the graduate program if admission requirements are not met.

3 Program Requirements

3.1 Biomedical Engineering M.S. Program – Thesis Option

[The Master of Science \(M.S.\) in Biomedical Engineering](#) with thesis provides students with education in advanced biomedical engineering topics as well as research experience culminating in a thesis.

3.1.1 Curriculum

The M.S. curriculum includes a total of 30 semester hours, consisting of coursework and thesis research (see below). To enroll in a course, students must satisfy the course prerequisites.

The thesis-type M.S. degree is awarded upon successful completion of the following requirements:

- Fifteen (15) semester hours of biomedical engineering graduate core courses (see below)
- Nine (9) semester hours of approved electives
- Six (6) semester hours of BME 5971, Thesis Research (S/U grade only)
- Oral defense of the M.S. thesis - BME 8976, Thesis Defense (0) (P/F grade only)
- Registration and attendance at all departmental seminars - BME 5935, BME Seminar (0)

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements. The candidate also must complete and defend an original thesis (BME 8976, Thesis Defense).

3.1.2 Required Graduate Core Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 - Advanced Chemical Engineering Computations (3)

BME 5313 - Fundamentals of Cell Bioengineering (3)

3.1.3 Approved Electives (nine [9] semester hours):

Minimum 6 semester hours are required to be on the biomedical engineering elective courses list. Students should consult their Major Professor (Faculty Advisor) to determine the elective courses offered by the department. Additional elective courses may be on the [department website](#). Typical biomedical engineering elective courses:

- BME 5XXX - Advanced Biomaterials (3)
- BME 5142 - Soft Matter Characterization (3)
- BME 5314 - Bioengineering (3)
- BME 5362 - Neural Engineering (3)
- BME 5937 - Special Topics in Biomedical Engineering (3)
- BME 6530 - NMR and MRI Methods in Biology and Medicine (3)

Find other elective courses in the [CBE Approved Graduate Elective List](#).

3.1.4 Thesis Hours (six [6] semester hours):

BME 5971 - Thesis Research (S/U grade only)

3.1.5 Thesis Defense (zero [0] semester hours):

BME 8976 - Thesis Defense (0) (P/F grade only) - In addition to the thirty (30) semester hours of coursework and thesis, an oral examination in defense of the thesis is required for the Master of Science in biomedical engineering thesis option. At least two hours of thesis research (BME 5971) must be completed during the term of the thesis defense (BME 8976).

3.2 Chemical Engineering M.S. Program – Thesis Option

[The Master of Science \(M.S.\) in Chemical Engineering](#) with thesis provides students with education in advanced chemical engineering topics as well as research experience culminating in a thesis.

3.2.1 Curriculum

The M.S. curriculum includes a total of 30 semester hours, consisting of coursework and thesis research (see below). To enroll in a course, students must satisfy the course prerequisites.

The thesis-type M.S. degree is awarded upon successful completion of the following requirements: Fifteen (15) semester hours of chemical engineering graduate core courses (see below)

Nine (9) semester hours of approved electives

Six (6) semester hours of ECH 5971r, Thesis Research (S/U grade only)

Oral defense of the M.S. thesis - ECH 8976, Thesis Defense (0) (P/F grade only)

Registration and attendance at all departmental seminars - ECH 5935, ChE Seminar (0)

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements. The candidate also must complete and defend an original thesis (ECH 8976, Thesis Defense).

Transfer credit from another institution is limited to six (6) semester hours towards the M.S. degree and only with departmental approval.

3.2.2 Required Graduate Core Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5126 - Advanced Chemical Engineering Thermodynamics I (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 - Advanced Chemical Engineering Computations (3)

3.2.3 Approved Electives (nine [9] semester hours):

Minimum 6 semester hours are required to be on the chemical engineering elective courses list.

Students should consult their Major Professor (Faculty Advisor) to determine the elective courses offered by the department. Additional elective courses may be on the [department website](#). Typical chemical engineering elective courses:

ECH 5262 - Advanced Transport Phenomena II (3)

ECH 5526 - Advanced Reactor Design (3)

ECH 5706 - Electrochemical Engineering Science (3)

ECH 5806 - Petroleum Science and Technology (3)

ECH 5820 Polymer Physical Science and Engineering (3)

ECH 5828 - Introduction to Polymer Science and Engineering (3)

ECH 5834 - Chemical Engineering Materials (3)

ECH 5838 - X-Ray Structural Characterization of Materials (3)

ECH 5841 - Advanced Chemical Engineering Mathematics II (3)

ECH 5934r - Special Topics in Chemical Engineering (3)

Find other elective courses in the [CBE Approved Graduate Elective List](#).

3.2.4 Thesis Hours (six [6] semester hours):

ECH 5971r - Thesis Research (S/U grade only)

3.2.5 Thesis Defense (zero [0] semester hours):

ECH 8976 - Thesis Defense (0) (P/F grade only)

In addition to the thirty (30) semester hours of coursework and thesis, an oral examination in defense of the thesis is required for the Master of Science in chemical engineering thesis option. At least two hours of thesis research, listed as repeatable course (ECH 5971) must be registered for

concurrently during the term of the thesis defense (ECH 8976).

3.3 General M.S. Thesis Requirements

3.3.1 Annual Safety Training

CBE places a priority on the conduct of research in a safe and responsible fashion. Therefore, all M.S. thesis students are required to take a minimum of safety training courses offered by the [FSU Office of Environmental Health & Safety](#). All new M.S. Thesis students need to attend the safety training in-person. The safety training normally includes Hazardous Waste Management (Haz Waste), Biosafety Level 2 and Fire Safety (online). Additional training may be required by individual research laboratories as mandated by the parameters of research and the Major Professor (Faculty Advisor). Finally, continuing graduate students are required to maintain safety training compliance by completing online refresher courses annually when requested by FSU EH&S and its automatic training notification system.

3.3.2 RCR Training

M.S. (thesis) students are required to successfully complete Responsible Conduct of Research (RCR) training as part of the degree requirements in the department.

This training must be completed by the end of the first semester of the student's initial enrollment in a CBE graduate program. (For additional details, please refer to the Academic Policies section below.)

3.3.3 Center for the Advancement of Teaching (CAT)

All M.S. graduate students are required to attend the FSU Program for [Center for the Advancement of Teaching \(CAT\) online TA training](#) if they are to be assigned to teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. This workshop is provided before the beginning of the fall semester, with a modified version at the start of the spring semester for out-of-cycle admissions.

3.3.4 Major Professor (Faculty Advisor) and Supervisory Committee

The M.S. Thesis student must select a Major Professor (Faculty Advisor) by the end of first semester in the program, and they also need to form a supervisory committee by the end of their second semester of their first year in the program. The Major Professor (Faculty Advisor) must agree to serve as the student's academic advisor and thesis supervisory committee's chair and must be a full-time CBE faculty with Graduate Faculty/Directive status.

The M.S. Thesis student chooses the supervisory committee in consultation with the major professor (Faculty advisor). The supervisory committee consists of three (3) full-time faculty members, including the Major Professor (Faculty Advisor) as the chair who must be within your program and research area (can have two co-chairs if one is within your program); one member may be from outside of CBE. All committeemembers must have Graduate Faculty status. Additional members may be appointed to the committee if deemed appropriate by the Major Professor (Faculty Advisor). The supervisory committee overseesand supervises the students' research efforts, approves the written thesis, attends the oral defense of the thesis and recommends granting of the degree.

3.3.5 Annual Evaluation

All M.S. Thesis students must report their annual educational and research progress to their thesis supervisory committee at least once a year, typically in the form of an oral presentation. In addition, all students will use the Departmental Annual Evaluation form to provide an update on and changes to the Plan of Study, a self-evaluation of progress over the last year, and an evaluation by the Major Professor (Faculty Advisor). After discussions with the committee the student should submit the complete annual evaluation form (and any other annual evaluation forms required by the Department, College or University, *e.g.* the FAMU Annual Evaluation for graduate students, Form 2) by the end of the spring semester. The instructions and form for the Annual Evaluation can be found in the internal CBE Graduate Students Canvas Group

3.3.6 Thesis.

The M.S. Thesis student selects the thesis topic and prepares the thesis with supervision by the Major Professor (Faculty Advisor) and supervisory committee. Before registering for thesis hours, the student must consult with the Major Professor (Faculty Advisor) as to the proportion of time to be devoted to thesis work. It is the student's responsibility to comply with the required thesis format of the University and the deadlines and requirements for thesis submission (see the [FAMU Graduate Studies website](#) or [FSU Graduate Studies Website](#)).

When the complete thesis is ready for review by the supervisory committee, the Major Professor (Faculty Advisor) will authorize its distribution to committee members. The thesis manuscript should be complete in every respect, including data analysis, figures and tables. The supervisory committee can recommendeditorial and/or substantive changes after review and the oral thesis defense. The thesis should be provided to the supervisory committee at least one month before the date of the oral thesis defense.

3.3.7 Journal manuscripts

In partial fulfillment of the M.S. degree requirements, the M.S. student must prepare a minimum of one (1) complete manuscript that is ready for submittal to a peer-reviewed journal. It is expected that the Major Professor (Faculty Advisor) will submit the manuscript and complete the publication process.

3.3.8 Thesis defense

A thesis defense with oral examination is a mandatory part of the degree requirements. The student must satisfactorily pass this oral examination, as determined by the supervisory committee, before submission of the final thesis to the University.

The thesis defense will be scheduled only with approval of the Major Professor (Faculty Advisor) and the thesis supervisory committee.

At least 1 month prior to the M.S. thesis defense, the written thesis must be submitted to all members of the Thesis Supervisory Committee.

The Oral thesis defense should be scheduled at least two weeks prior to the final post-defense deadline to allow sufficient time for any required revisions, final approval, and completion of all related dissertation submission documentation. Students should refer to the [Graduate School website](#) for current manuscript deadlines and additional thesis requirements.

The student is also responsible for submitting the thesis defense announcement to the university, college and department minimum of two weeks prior to the thesis defense date. The oral defense consists of two parts: 1) a public thesis presentation that summarizes the student's major research accomplishments, including appropriate use of visual aids, with a duration of approximately 30–40 minutes; and 2) a closed oral examination conducted by the Thesis Supervisory Committee, which is not open to the public.

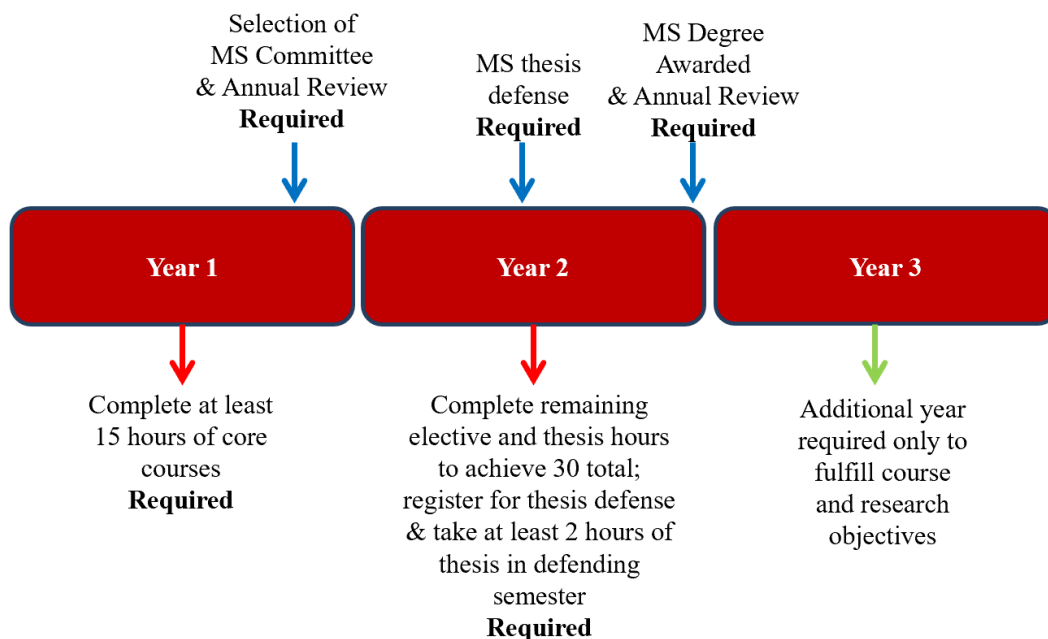
During the closed oral examination, each committee member will use the thesis defense assessment rubric to evaluate the student's performance in the following areas: Written and Oral Communication Skills, Analysis of Literature, Critical Thinking Skills, Ability to Solve Biomedical/Chemical Engineering Problems Using Computational and Experimental Skills, and Creative Thinking and Justification of Hypotheses. After the defense, the committee chair will complete the Dissertation Defense Outcomes Assessment Form by documenting the committee's average scores, overall assessment, and comments. The completed outcomes assessment form will be submitted to the Graduate Director and shared with the student and the Graduate Coordinator for program records.

To successfully pass the thesis defense, students must achieve a minimum overall assessment score of 3.0 based on the thesis defense rubric.

3.3.9 Suggested timeline and checklist

A suggested timeline for completion of the M.S. Thesis degree requirements and a milestones checklist is provided below, respectively. Students may need to enroll in additional hours to maintain full-time status each semester.

3.3.9.1 Thesis-based M.S. Timeline



3.3.9.2 Thesis M.S. Milestone Checklist

Milestone or Action	When
Select a Major Professor (Faculty Advisor)	By the end of first semester of Year 1
Complete RCR training	By the end of first Fall semester
Complete full thesis committee	By the end of second semester of Year 1
Submit Annual Evaluations	By the end of each Spring semester
Complete the 15 credits of core courses	By the end of Year 1
Apply for graduation through the University	Beginning of final semester
Complete the 15 credits of electives	Before graduation
Prepare a manuscript for journal submission	Final semester
Schedule thesis defense	In final semester, at least two weeks prior to planned defense date
Defend thesis and submit approved final M.S. thesis to university	Check University for deadlines

3.4 Biomedical Engineering M.S. Program – Course (non-thesis) Option

[The Master of Science \(M.S.\) in Biomedical Engineering](#) by coursework (non-thesis) provides students with additional educational background in advanced biomedical engineering topics.

3.4.1 Curriculum

The M.S. curriculum includes a total of 30 semester hours, consisting solely of coursework (see below).

The course-based(non-thesis) M.S. degree is awarded upon successful completion of the following requirements:

- Fifteen (15) semester hours of biomedical engineering graduate core courses (see below)
- Fifteen (15) semester hours of approved electives
- Registration and attendance at all departmental seminars - BME 5935, BME Seminar (0)

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements.

Transfer credit from another institution is limited to six (6) semester hours towards the M.S. degree and only with departmental approval.

Note: Departmental support generally is not available for students pursuing a non-thesis M.S. degree.

3.4.2 Required Graduate Core Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 - Advanced Chemical Engineering Computations (3)

BME 5313 - Fundamentals of Cell Bioengineering (3)

3.4.3 Approved Electives (fifteen [15] semester hours):

Minimum 6 semester hours are required to be on the biomedical engineering elective courses list. Students should consult their major professors (faculty advisors) to determine the elective courses offered by the department. Additional elective courses may be found on the [department website](#).

Typical biomedical engineering elective courses:

- BME 5XXX - Advanced Biomaterials (3)
- BME 5142 - Soft Matter Characterization (3)
- BME 5314 - Bioengineering (3)
- BME 5362 - Neural Engineering (3)
- BME 5937 - Special Topics in Biomedical Engineering (3)
- BME 6530 - NMR and MRI Methods in Biology and Medicine (3)

Find other approved elective courses in the [CBE Approved Graduate Elective List](#).

3.5 Chemical Engineering M.S. Program – Course(non-thesis) Option

[The Master of Science \(M.S.\) in Chemical Engineering](#) by coursework (non-thesis) provides students with additional educational background in advanced chemical engineering topics.

3.5.1 Curriculum

The M.S. curriculum includes a total of 30 semester hours, consisting solely of coursework(see below).

The course-based M.S. degree is awarded upon successful completion of the following requirements:

- Fifteen (15) semester hours of chemical engineering graduate core courses (see below)
- Fifteen (15) semester hours of approved electives
- Registration and attendance at all departmental seminars - ECH 5935, ChE Seminar (0)

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements.

Transfer credit from another institution is limited to six (6) semester hours towards the M.S. degree and only with departmental approval.

Note: Departmental support generally is not available for students pursuing a non-thesis M.S. degree.

3.5.2 Required Graduate Core Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5126 - Advanced Chemical Engineering Thermodynamics I (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 - Advanced Chemical Engineering Computations (3)

3.5.3 Approved Electives (fifteen [15] semester hours):

Minimum 6 semester hours are required to be on the chemical engineering elective courses list. Students should consult their major professors (faculty advisors) to determine the elective courses offered by the department. Additional electives could be found on the [department website](#).

Typical chemical engineering elective courses:

- ECH 5262 - Advanced Transport Phenomena II (3)
- ECH 5526 - Advanced Reactor Design (3)
- ECH 5706 - Electrochemical Engineering Science (3)
- ECH 5806 - Petroleum Science and Technology (3)
- ECH 5820 - Polymer Physical Science and Engineering (3)
- ECH 5828 - Introduction to Polymer Science and Engineering (3)
- ECH 5834 - Chemical Engineering Materials (3)
- ECH 5838 - X-Ray Structural Characterization of Materials (3)
- ECH 5841 - Advanced Chemical Engineering Mathematics II (3)
- ECH 5934r - Special Topics in Chemical Engineering (3)

Find other approved elective courses in the [CBE Approved Graduate Elective List](#).

3.6 General Course-Based(non-thesis) M.S. Requirements

3.6.1 Annual Safety Training

CBE places a priority on the conduct of research in a safe and responsible fashion. Therefore, all M.S. students, including both thesis and non-thesis students, are required to take a minimum of safety training courses offered by the [FSU Office of Environmental Health & Safety](#). All new M.S. Thesis new students need to attend the safety training in-person, while continuing students may complete the safety training and refresher courses online. The safety training normally includes Hazardous Waste Management (Haz Waste), Biosafety Level 2 and Fire Safety (online). Additional training may be required by individual research laboratories as mandated by the parameters of research and the Major Professor (Faculty Advisor).

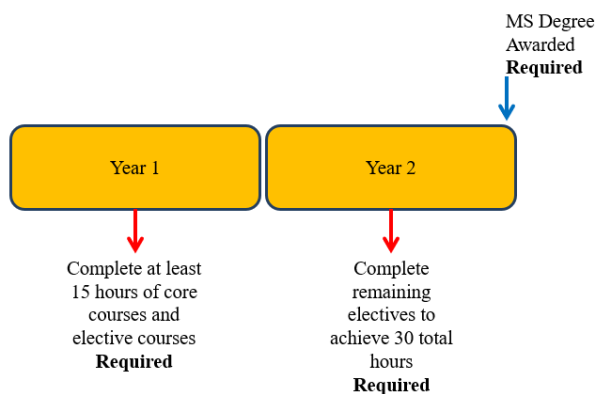
3.6.2 Center for the Advancement of Teaching (CAT)

All M.S. graduate students are required to attend the FSU Program for [Center for the Advancement of Teaching \(CAT\)](#) online TA training if they are to be assigned to teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. This workshop is provided before the beginning of the fall semester, with a modified version at the start of the spring semester for out-of-cycle admissions.

3.6.3 Suggested timeline and checklist

A suggested timeline for completion of the course-based(non-thesis) M.S. degree requirements and a milestones checklist are provided below, respectively. Students may need to enroll in additional hours to maintain full-time status each semester.

3.6.3.1 Course-based(non-thesis) M.S. Timeline



3.6.3.2 Course-based(non-thesis) M.S. Milestone Checklist

Milestone or Action	When
Request transfer credit (if applicable)	By the end of first semester of Year 1
Complete 15 credits of core courses	By the end of Year 1
Complete the 15 credits of electives	By the end of final semester
Apply for graduation with university	Beginning of final semester

3.7 Biomedical Engineering (BME) Ph.D. Program

The [Ph.D. degree in Biomedical Engineering](#) is a research degree designed to produce a scholar; it is granted only to students who have demonstrated mastery in a specialty of biomedical engineering and the capability to conduct original and independent scholarly work.

3.7.1 Curriculum

Fifty-seven (57) semester hours are required for the Ph.D. degree in BME as follows:

- Fifteen (15) semester hours of BME core courses
- Fifteen (15) semester hours of approved electives
- Successful completion of BME 8965r, Doctoral Preliminary Exam (0) (P/F grade only)
- Twenty-seven (27) semester hours of BME 6980r, Dissertation
- Successful defense of an oral and written dissertation - BME 8985, Dissertation Defense (0) (P/F grade only)
- Registration and attendance at all departmental seminars - BME 5935, BME Seminar (0)

No courses with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements.

3.7.2 Required Core Graduate Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 Advanced Chemical Engineering Computations (3)

BME 5313 - Fundamentals of Cell Bioengineering (3)

3.7.3 Approved Electives (fifteen [15] semester hours):

Minimum 6 semester hours are required to be in the biomedical engineering major elective courses list (BME-prefix courses). Students should consult with their major professors (faculty advisors) to determine the elective courses offered by the department.

Typical biomedical engineering elective courses are below, and additional electives can be found on the department's website.

- BME 5XXX - Advanced Biomaterials (3)
- BME 5142 - Soft Matter Characterization (3)
- BME 5314 - Bioengineering (3)
- BME 5362 - Neural Engineering (3)
- BME 5937 - Special Topics in Biomedical Engineering (3)
- BME 6530 - NMR and MRI Methods in Biology and Medicine (3)

Find other elective courses in the [CBE Approved Graduate Elective List](#).

3.7.4 Ph.D. Doctoral Preliminary Examination (zero [0] semester hours):

BME 8965r - Doctoral Preliminary Exam (0) (P/F grade only)

After the first semester of matriculation, Ph.D. students are required to complete the Ph.D. Preliminary Examination, the first milestone toward Ph.D. candidacy. Under the current curriculum, the examination is administered during the Spring semester of the first year.

Students who do not pass the examination on the first attempt **are not automatically eligible for a second attempt**. A retake requires approval from the Graduate Committee and, if approved, is typically scheduled for the following Fall semester. Students are limited to two attempts. Failure to pass the examination after two attempts will result in dismissal from the Ph.D. program.

3.7.5 Dissertation Hours (twenty-seven [27] semester hours):

BME 6980r - Dissertation Research (S/U grade only) NOTE: Following successful completion of the Preliminary Examination, students must take a minimum number (currently, two) of dissertation hours (BME 6980r) EVERY semester that they remain in the Ph.D. program regardless of other class loads.

NOTE: Following successful completion of the Preliminary Examination, students must take a minimum number (currently, two) of dissertation hours (BME 6980) EVERY semester that they remain in the Ph.D. program regardless of other class loads. As most tuition waivers provide a maximum of nine (9) credit hours per term, students must consider this requirement when registering for multiple courses and should consult the Major Professor (Faculty Advisor) and CBE Graduate Director for guidance before enrolling for more than nine hours.

3.7.6 Dissertation Defense (zero [0] semester hours):

BME 8985 - Dissertation Defense (0) (P/F grade only)

NOTE: In the semester of the DISSERTATION DEFENSE (BME 8985), degree candidates must take a minimum number of dissertation hours simultaneously. Currently, the minimum number of dissertation hours (BME 6980r) is two (2) during the semester of defense.

3.7.7 Degree Requirements:

The following requirements for the Ph.D. degree in biomedical engineering must be met:

- Passing BME 8965 Doctoral Preliminary Examination within two consecutive exam attempts (see Ph.D. preliminary examination requirements below for more details). Successful completion will result in an initial admission to Ph.D. candidacy.
- Successfully complete Responsible Conduct of Research (RCR) training as part of the degree requirements by the end of the first fall term.
- Completion of a minimum of thirty semester hours of advanced coursework (including fifteen semester hours of core coursework and fifteen semester hours of electives).
- Completion of at least twenty-seven semester hours of dissertation research listed as repeatable course BME 6980 Dissertation.
- Registration and attendance at all departmental seminars listed as repeatable course BME 5935 Biomedical Engineering Seminar.
- Selection of a research topic and a Major Professor (Faculty Advisor) by the end of fall semester of first year
- Form the full Ph.D. supervisory committee in consultation with the Major Professor (Faculty Advisor) before the Preliminary Exam starts.
- Submit and defend a prospectus on the dissertation topic to the Doctoral Dissertation Supervisory Committee no later than the end of the spring term of the second year.
- Complete a one-term teaching assistantship (lab TA) in an approved undergraduate laboratory between 2nd year and the term prior to the graduating term.
- Complete Annual evaluation at the end of the Spring semester every year.
- Presentation of a research topic at one local, regional, national, or international professional meeting.
- Submission or publication of scholarly articles (minimum of one) based on original dissertation research in peer-reviewed journals.
- Passing BME 8985 Dissertation Defense. At least two hours of dissertation (BME 6980) must be registered concurrently during the term of the dissertation defense (BME 8985).

All paperwork associated with the above requirements must be submitted in a timely fashion to the Department with appropriate signatures for review by the CBE Graduate Committee and Director. Students are required to use DocuSign for the collection of all required signatures on program-related documents.

3.8 Chemical Engineering (ChE) Ph.D. Program

[The Ph.D. degree in Chemical Engineering](#) is a research degree designed to produce a scholar; it is granted only to students who have demonstrated mastery in a specialty of chemical engineering and capacity to conduct original and independent scholarly work.

3.8.1 Curriculum

Fifty-seven (57) semester hours are required for the Ph.D. degree in ECH as follows:

- Fifteen (15) semester hours of ECH core courses
- Fifteen (15) semester hours of approved electives
- Twenty-seven (27) semester hours of ECH 6980r, Dissertation
- Successful completion of ECH 8965r, Doctoral Preliminary Exam (0) (P/F grade only)

- Successful defense of an oral and written dissertation - ECH 8985, Dissertation Defense (0) (P/F grade only)
- Registration and attendance at all departmental seminars - ECH 5935, ECH Seminar (0)

No courses with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade of "C" will be counted toward fulfillment of degree requirements.

3.8.2 Required Core Graduate Courses (fifteen [15] semester hours):

ECH 5052 - Research Methods in Chemical Engineering (3)

ECH 5126 - Advanced Chemical Engineering Thermodynamics I (3)

ECH 5261 - Advanced Transport Phenomena I (3)

ECH 5840 - Advanced Chemical Engineering Mathematics I (3)

ECH 5852 - Advanced Chemical Engineering Computations (3)

3.8.3 Approved Electives (fifteen [15] semester hours):

Minimum 6 semester hours are required to be in the chemical engineering major elective courses list. Students should consult with their major professors (faculty advisors) to determine the elective courses offered by the department.

Typical chemical engineering major elective courses and additional electives can be found on the department website.

- ECH 5262 - Advanced Transport Phenomena II (3)
- ECH 5526 - Advanced Reactor Design (3)
- ECH 5706 - Electrochemical Engineering Science (3)
- ECH 5806 - Petroleum Science and Technology (3)
- ECH 5820 - Polymer Physical Science and Engineering (3)
- ECH 5828 - Introduction to Polymer Science and Engineering (3)
- ECH 5834 - Chemical Engineering Materials (3)
- ECH 5838 - X-Ray Structural Characterization of Materials (3)
- ECH 5841 - Advanced Chemical Engineering Mathematics II (3)
- ECH 5934r - Special Topics in Chemical Engineering (3)

Find other elective courses in the [CBE Approved Graduate Elective List](#).

3.8.4 Ph.D. Doctoral Preliminary Examination (zero [0] semester hours):

ECH 8965r - Doctoral Preliminary Exam (0) (P/F grade only)

After the first semester of matriculation, Ph.D. students are required to complete the Ph.D. Preliminary Examination, the first milestone toward Ph.D. candidacy. Under the current curriculum, the examination is administered during the Spring semester of the first year.

Students who do not pass the examination on the first attempt **are not automatically eligible for a second attempt.** A retake requires approval from the Graduate Committee and, if approved, is typically scheduled for the following Fall semester. Students are limited to two attempts. Failure to pass the examination after two attempts will result in dismissal from the Ph.D. program.

3.8.5 Dissertation Hours (twenty-seven [27] semester hours):

ECH 6980r - Dissertation Research (S/U grade only)

NOTE: Following successful completion of the Preliminary Examination, students must take a minimum number (currently, two) of dissertation hours (ECH 6980r) EVERY semester that they remain in the Ph.D. program regardless of other class loads. As most tuition waivers provide a maximum of nine (9) credit hours per term, students must consider this requirement when registering for multiple courses and should consult the Major Professor (Faculty Advisor) and CBE Graduate Director for guidance before enrolling for more than nine hours.

3.8.6 Dissertation Defense (zero [0] semester hours):

ECH 8985 - Defense (0) (P/F grade only) - In addition to the thirty (30) semester hours of coursework and 27 hours of dissertation, an oral examination in defense of the dissertation is required for the Ph.D. in chemical engineering.

NOTE: In the semester of the DISSERTATION DEFENSE (ECH 8985), degree candidates must take a minimum number of dissertation hours simultaneously. Currently, the minimum number of dissertation hours (ECH 6980r) is two (2) during the semester of defense.

3.8.7 Degree Requirements:

The following requirements for the Ph.D. degree in chemical engineering must be met:

- Passing ECH 8965 Doctoral Preliminary Examination within two consecutive exam attempts (see Ph.D. preliminary examination requirements below for more details). Successful completion will result in an initial admission to Ph.D. candidacy.
- Successfully complete Responsible Conduct of Research (RCR) training as part of the degree requirements by the end of the first fall term.
- Completion of 30 semester hours of advanced coursework (including 15 semester hours of core graduate coursework and 15 hours of electives).
- Completion of at least 27 semester hours of dissertation research, listed under repeatable course ECH 6980 Dissertation.
- Registration and attendance at all departmental seminars listed under repeatable course ECH 5935 Chemical Engineering Seminar.
- Selection of a research topic and a Major Professor (Faculty Advisor) by the end of fall semester of first year
- Complete Annual evaluation in the end of the Spring semester every year.
- Form the full Doctoral Dissertation Supervisory Committee in consultation with the Major Professor (Faculty Advisor) before the Preliminary Exam starts.
- Submit and defend a prospectus on the dissertation topic to the supervisory committee no later than the end of the spring term of the second year.
- Complete a one-term teaching assistantship (lab TA) in an approved undergraduate laboratory between 2nd year and the term prior to the graduating term.
- Presentation of a research topic at one local, regional, national, or international professional meeting.
- Submission or publication of scholarly articles (minimum of one) based on original dissertation research in peer-reviewed journals.

- Successful passage of ECH 8985 Dissertation Defense. At least two hours of dissertation (ECH 6980) must be registered for concurrently during the term of the dissertation defense (ECH 8985).

All paperwork associated with the above requirements must be submitted in a timely fashion to the Department with appropriate signatures for review by the CBE Graduate Committee and its Chair. Students are required to use DocuSign for the collection of all required signatures on program-related documents.

3.9 General Ph.D. Program Requirements

The following items are common requirements for all CBE Ph.D. students regardless of discipline.

3.9.1 Progression to Ph.D. following M.S. Degree or Other Graduate Coursework

Students with M.S. degrees in BME or ChE from the FAMU-FSU College of Engineering may, with approval of the graduate committee and the Major Professor (Faculty Advisor), take six (6) additional approved semester hours beyond the thesis-type M.S. course requirements to satisfy the thirty (30) semester hour requirement for the Ph.D. All other requirements must be fulfilled as stated above.

Students with M.S. degrees in BME or ChE from other institutions will be given a specific course plan by the departmental graduate committee. A maximum of thirty (30) semester hours may be assigned to remedy any deficiencies in the student's background. Transfer credit from another institution is limited to a maximum of six (6) semester hours towards the Ph.D. degree and only with departmental approval. The petition for credit transfer must be submitted by the student during the first academic year in the program.

3.9.2 Annual Safety Training

CBE places a priority on the conduct of research in a safe and responsible fashion. Therefore, all M.S. thesis students are required to take a minimum of safety training courses offered by the [FSU Office of Environmental Health & Safety](#). All new M.S. Thesis new students need to attend the safety training in person, and current students can take the safety training online. The safety training normally includes Hazardous Waste Management (Haz Waste), Biosafety Level 2 and Fire Safety (online). Additional training may be required by individual research laboratories as mandated by the parameters of research and the Major Professor (Faculty Advisor). Finally, continuing graduate students are required to maintain safety training compliance by completing online refresher courses annually when requested by FSU EH&S and its automatic training notification system.

3.9.3 RCR Training

Ph.D. students are required to successfully complete Responsible Conduct of Research (RCR) training as part of the degree requirements in the department.

This training must be completed by the end of the first semester of the student's initial enrollment in a CBE graduate program. (For additional details, please refer to the Academic Policies section below.)

3.9.4 Center for the Advancement of Teaching (CAT)

All Ph.D. graduate students are required to attend the FSU Program for [Center for the Advancement of Teaching \(CAT\)](#) online TA training if they are to be assigned to teaching assistant (TA) duties. This

requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. This workshop is provided before the beginning of the fall semester, with a modified version at the start of the spring semester for out-of-cycle admissions. (For additional details, please refer to the University Requirements and Policies section below.)

3.9.5 Spoken English Requirement (SPEAK Test)

For international students whose home country native language isn't English, passage of the SPEAK (Speaking Proficiency English Assessment Kit) examination is a test for evaluating the English-speaking ability of non-native speakers of English by [Center for Intensive English Studies](#). Generally, the SPEAK test is required for all funded TAs. However, all new CBE graduate students are required to complete the SPEAK test requirement regardless of their current funding status. This ensures that students who are not initially funded but may be assigned TA responsibilities in the future have satisfied the required eligibility criteria in advance.

A minimum speaking score of 45 is required for students to be eligible to perform Level 1 course TA duties. Students who receive a speaking score below 45 must successfully complete the required English for Academic Purposes (EAP) course before being assigned Level 1 TA responsibilities. For Level 2 Lab TA assignments, students must achieve a minimum speaking score of 50 to be eligible for this role. Students with a speaking score below 50 must complete the required EAP course before serving as a Level 2 Lab TA.

3.9.6 Major Professor (Faculty Advisor) and Doctoral Dissertation Supervisory Committee

The Ph.D. student selects a Major Professor (Faculty Advisor) by the end of the first semester, and they also need to form the full Doctoral Dissertation Supervisory Committee before the Preliminary Exam starts. Major Professor (Faculty Advisor) must be a full-time CBE faculty member with Graduate Faculty/Directive status and also must agree to serve as the student's academic advisor and dissertation supervisor.

The Ph.D. student will choose the Doctoral Dissertation Supervisory Committee in consultation with the Major Professor (Faculty Advisor). The supervisory committee consists of four (4) full-time faculty members, including the Major Professor (Faculty Advisor) as the chair; one member must be from outside of CBE and serve as the University Representative. The University Representative must be a tenured member of the faculty (FSU or FAMU depending upon the student's university). The other two members must be CBE faculty members. All committee members must have Graduate Faculty/Directive status. Additional members may be appointed to the committee, if deemed appropriate by the Major Professor (Faculty Advisor). The supervisory committee oversees and supervises the student's research effort, administers the Ph.D. Prospectus, recommends full doctoral candidacy, attends the oral defense of the dissertation, approves the written dissertation and oral defense, and recommends granting of the degree.

3.9.7 Instructional Responsibilities (lab TA duty)

Practice and experience in instruction is a component of the doctoral degree. Therefore, Ph.D. students are required assistance in the teaching of at least one undergraduate laboratory course during their tenure in the Department. During the semester of service as a laboratory teaching assistant (TA), the Ph.D. student will receive a stipend supplement to offset the additional training and instructional time involved in this duty. At present, the following undergraduate laboratory courses satisfy this requirement: BME 4332L – Cell & Tissue Engineering; BME 4403C –; BME 4503L–

Bioinstrumentation; ECH 3274L – Transport Phenomena; and ECH 4404L - Unit Operations. For international students whose home country native language isn't English, passage of the SPEAK (Speaking Proficiency English Assessment Kit) examination by [Center for Intensive English Studies](#) for conversational English in a classroom setting to enable the performance of laboratory and teaching assistance duties is required. For Level 2 Lab TA, students would need to score 50 or higher to be eligible to serve in this role. If the score isn't met, students are required to take the EAP course to be certified to serve as the level 2 lab TA role.

3.9.8 Ph.D. Preliminary Examination

Successful Ph.D. candidates will have a sound background in engineering, as well as the creativity and judgment necessary to conduct independent research. The purpose of the Preliminary Examination is to assess these qualities with an emphasis on evaluating the student's potential to conduct an original course of study and investigation. All prospective Ph.D. candidates must enroll in the appropriate Doctoral Preliminary Exam course (either BME 8965 or ECH 8965) for the semester that they intend to take the preliminary examination. Currently, the Preliminary Examination is administered in the 1st spring semester following initial matriculation in the CBE graduate program unless otherwise determined by the CBE Graduate Committee. Second attempts are administered in the following fall semester, provided the graduate committee has approved a second attempt for students who did not pass the first attempt.

Students are admitted to candidacy for the Ph.D. degree after passing the Preliminary Examination. The Doctoral Dissertation Supervisory Committee chair (faculty advisor) will submit the Preliminary Exam Outcomes Assessment form to the CBE graduate coordinator. A student becomes eligible to and must register for dissertation credits (BME 6980 or ECH 6980) the semester after successful completion of the Preliminary Examination and must maintain at least 2 hours of dissertation credits each semester thereafter until defense of the Ph.D. dissertation.

The Preliminary Examination tests the student's ability (1) to define, describe and examine critically relevant literature; (2) to think creatively and to apply basic chemical/biomedical engineering concepts; (3) to communicate in a scholarly and rigorous manner the progress and results of research; and (4) to conduct productive, rigorous and creative scientific investigations.

This exam tests the student's ability to evaluate a fundamental research problem from the literature of chemical or biomedical engineering. Specifically, the student will be asked to:

- Identify the problems addressed in the assigned article;
- Formulate a critical appraisal of the authors' contributions to the problem and the significance of the work;
- Critically evaluate the technical soundness of the approach used and results obtained;
- Summarize and critique advances in the field since the publication of the assigned article;
- Propose in concrete terms research work that might be done to extend and (if necessary) improve upon the study discussed in the article; and
- Comment on the incorporation of the article's findings into the potential course of dissertation work of the student.

Following the oral presentation, the Doctoral Dissertation Supervisory Committee will evaluate the

students' performance in a closed session. Two outcomes are possible: pass or fail. An affirmative majority vote from the committee is required for the student to pass the examination. A pass permits the student to begin or continue research contributing to the Ph.D. dissertation. The committee may also provide recommendations to support the students' academic progress, such as (but not limited to) the successful completion of specific coursework or completion of a M.S. degree prior to granting full Ph.D. candidacy. These recommendations do not affect the pass status but are intended to enhance the students' preparation for doctoral research.

Per College policy, the Dean's office will be notified of the outcome of any examination attempt. With graduate committee approval, the student may make an additional attempt to pass the examination if failing the first attempt. The Doctoral Supervisory Committee will make a recommendation to the student and Major Professor (Faculty Advisor) about the examination performance of the student and the likelihood of future success. The re-examination will be scheduled at the discretion of the Graduate Committee. The second attempt is usually done a semester afterwards. Students must be registered separately for their first and second attempt and must receive either a "pass" or a "fail" grade for each attempt. Students can take the examination for admission to candidacy only twice. Failure of the Preliminary Examination on two occasions will eliminate the student from consideration for Ph.D. candidacy, rendering the student ineligible to continue in the degree.

Upon successful completion of the preliminary exam, the student is admitted to Ph.D. candidacy. For each attempt, the Preliminary Examination Committee chair will report the outcomes on the Ph.D. Preliminary Examination Outcome Assessment form and submission to the Graduate Director and Graduate Coordinator.

3.9.9 Annual evaluation

All Ph.D. students must meet with their Doctoral Dissertation Supervisory Committee at least once each academic year to report on their educational and research progress, typically through an oral presentation. Additional meetings are encouraged as needed. Students must also complete the Departmental Annual Evaluation Form. The completed form must be submitted through the CBE Graduate Student Canvas site under the Assignments tab by the end of the Spring semester.

For first-year Ph.D. students who pass the Preliminary Examination, the approved Candidacy Form will serve as the annual evaluation for that year, and no separate Departmental Annual Evaluation Form is required. Students who do not pass the Preliminary Examination must complete and submit the regular Departmental Annual Evaluation Form.

For students admitted in Fall 2025 or later, the Prospectus Defense is required as part of the second-year annual evaluation. Students admitted before Fall 2025 must complete the Prospectus Defense as part of their annual evaluation by the end of the Spring semester of their third year.

3.9.10 Ph.D. Prospectus

Following completion of the core coursework and the Ph.D. Preliminary Examination, students must prepare and defend a Ph.D. Prospectus that outlines the background, research objectives, methodology, and preliminary results supporting the proposed dissertation research.

Students admitted in Fall 2025 or later must complete the Prospectus Defense by the end of the Spring semester of their second year. Students admitted before Fall 2025 must complete the Prospectus Defense by the end of the Spring semester of their third year.

The Ph.D. Prospectus evaluates whether the student has demonstrated the ability to conduct independent research, obtain sufficient relevant scientific knowledge in research and integrate that knowledge into a coherent Ph.D. dissertation. The prospectus has both written and oral components and is administered by the Ph.D. dissertation committee and complies with the requirements of the college and University.

The written component of the Ph.D. Prospectus is a proposal describing the proposed research work for the students' dissertation. The proposal should represent the cumulation to date of educational and research activities focused on the proposed topic of study. At a minimum, the prospectus report should include the following components: abstract, problem statement or hypothesis, research aims or objectives, critical literature review, preliminary work, research plan and tasks, intellectual merit and broader impact, expected outcomes, and timeline for completion. The oral component of the Ph.D. prospectus will include a presentation by the student on the written proposal and dissertation research. The Ph.D. dissertation committee will evaluate both the written and oral components as well as the academic preparation and research activities of the student, and that committee is charged with assessing the proficiency of the student as well as the feasibility of the proposed project. In doing so, the committee may ask any questions of the student about the proposal or other topics relevant to the proposed work or discipline.

The Ph.D. dissertation committee will report on the outcome of the Ph.D. Prospectus according to the vote of its members. The committee chair will report on the outcome on the Ph.D. Prospectus Assessment form by submission to the Graduate Director and Graduate Coordinator.

Students who do not pass the first attempt are **not automatically permitted** a second attempt. Approval from the Graduate Committee is required to retake the prospectus defense. If approved, the retake will occur in a subsequent semester, with current policy typically scheduling the second attempt in the following semester. Students are permitted no more than two attempts before dismissal from the Ph.D. program. A student who fails the second attempt will be dismissed from the Ph.D. program.

In the following semester after completion of the prospectus, the student will receive an increase in stipend and should complete all dissertation work within two or three academic years.

3.9.11 Dissertation

The final and cumulating requirement of the doctoral program is the original and fundamental research resulting in the doctoral dissertation. Students will enroll in dissertation research hours (BME or ECH 6980) only after the successful completion of the Preliminary Examination and entrance to the doctoral candidacy. The student selects the dissertation topic in consultation with the faculty advisor and supervisory dissertation committee. The Doctoral Dissertation supervisory committee approves the dissertation research topic based on the student's dissertation prospectus proposal. To be acceptable, the dissertation must be original research that is a significant contribution to the discipline, and it must reflect a substantial scholarly effort on the student's part.

It is the student's responsibility to comply with the required dissertation format of the University as well as the deadlines and requirements for dissertation submission.

At the completion of the dissertation research and when the complete dissertation is ready for review by the Doctoral Dissertation Supervisory Committee, the major faculty (faculty advisor) will authorize its distribution to committee members. The dissertation should be complete in every respect, including all data analysis, figures and tables. The Doctoral Dissertation supervisory committee can recommend editorial and/or substantive changes after review and the oral dissertation defense. The dissertation should be provided to the Doctoral Dissertation Supervisory Committee at least 1 month prior to the dissertation defense date.

The Ph.D. student is required to defend the dissertation publicly according to Department, College and University policies with regards to announcement and scheduling. Notification of the defense is to be posted on the calendars of the Department, College and Graduate school at least two weeks prior to the date of the defense.

3.9.12 Scholarly Activities

In partial fulfillment of the Ph.D. degree requirements, the Ph.D. student must prepare a minimum of one (1) manuscript for peer-reviewed journals, which should have the status of "Accepted." The Major Professor (Faculty Advisor) may have more stringent requirements. It is highly recommended and expected that the dissertation will yield a minimum of 3-5 manuscripts and publications. In addition, the Ph.D. student must present a research topic at a local, regional, national or international professional meeting at least once during their tenure in the department.

3.9.13 Dissertation Defense

A dissertation defense with oral examination is a mandatory part of the degree requirements. The student must satisfactorily pass this oral examination, as determined by the Doctoral Dissertation supervisory committee, before submitting the final dissertation to the university.

The dissertation defense will be scheduled only with approval of the Major Professor (Faculty Advisor) and the Doctoral Dissertation supervisory committee. The student will be permitted to schedule the dissertation defense only if the student has 1) completed the research work, 2) written a complete dissertation, and 3) satisfy the scholarly activities requirement.

At least 1 month prior to the dissertation defense, the written dissertation must be submitted to all members of the Doctoral Dissertation Supervisory Committee.

The Oral dissertation defense should be scheduled at least two weeks prior to the final post-defense deadline to allow sufficient time for any required revisions, final approval, and completion of all related dissertation submission documentation. Students should refer to the Graduate School website for current manuscript deadlines and additional dissertation requirements.

The student is also responsible for submitting the defense announcement to the university, college and department minimum of two weeks prior to the defense date. The oral defense consists of two parts: 1) a public dissertation presentation that summarizes the student's major research accomplishments, including appropriate use of visual aids, with a duration of approximately 45–55 minutes; and 2) a closed oral examination conducted by the Doctoral Dissertation Supervisory Committee, which is not open to the public.

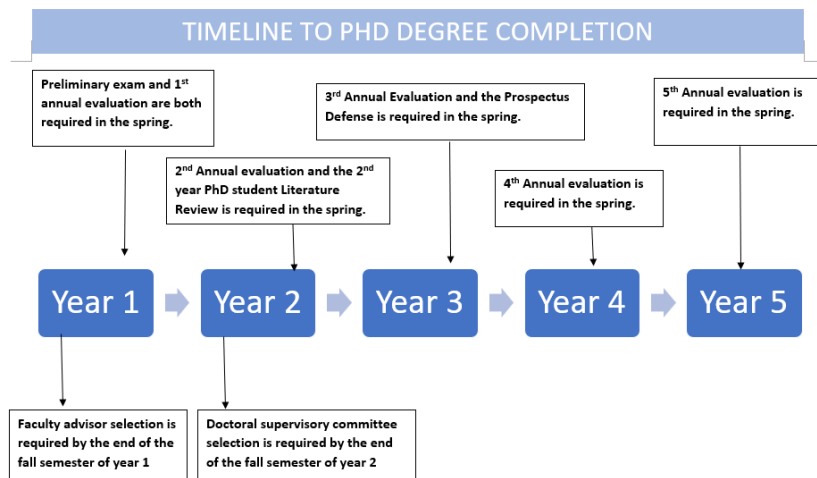
During the closed oral examination, each committee member will use the dissertation defense assessment rubric to evaluate the student's performance in the following areas: Written and Oral Communication Skills, Analysis of Literature, Critical Thinking Skills, Ability to Solve Biomedical/Chemical Engineering Problems Using Computational and Experimental Skills, and Creative Thinking and Justification of Hypotheses. After the defense, the committee chair will complete the Dissertation Defense Outcomes Assessment Form by documenting the committee's average scores, overall assessment, and comments. The completed outcomes assessment form will be submitted to the Graduate Director and shared with the student and the Graduate Coordinator for program records.

To successfully pass the dissertation defense, students must achieve a minimum overall assessment score of 3.0 based on the dissertation defense rubric.

3.9.14 Suggested timeline and checklist

A suggested timeline for completion of the Ph.D. degree requirements and a milestones checklist is provided below. Students may need to enroll in additional hours to maintain enrollment requirements.

3.9.14.1 Suggested Ph.D. timeline



All Ph.D. students are required to receive their *InFlight non-thesis master's degree* in year 2 or 3, one year after passing the prelim exam if they don't have the MS degree already.

3.9.14.2 Ph.D. milestones checklist

Milestone or Action	When
TA training	Before the first Fall semester
SPEAK Exam (for applicable international students)	Before the first Fall semester, with repeats as needed to meet the minimum required score
Complete RCR training	By the end of first Fall semester
Major Professor (Faculty Advisor) Selection	By the end of the first Fall semester
Annual Safety training	Every Fall semester

Doctoral Dissertation Supervisory Committee Selection	By January 31 st of the Spring semester of Year 1
Ph.D. Preliminary examination	Spring semester of Year 1
Complete the 15 credits of core courses	By the end of first academic year
Request transfer credit (if applicable)	By the end of first academic year
One Term Undergraduate laboratory TA requirement	Between Year 2 and final semester & completion of SPEAK minimum requirement (as needed)
First Annual evaluation	Spring semester of Year 1. For students who pass the Preliminary Examination, the approved Candidacy Form may serve as the first annual evaluation.
Dissertation Hours	Minimum enrollment of 2 dissertation hours each semester after successful completion of the Ph.D. Preliminary Examination
Second Annual Evaluation and Prospectus Defense (students admitted Fall 2025 or later)	Spring semester of Year 2
Third Annual and Prospectus Defense (students admitted before Fall 2025)	Spring semester of Year 3
Complete the 15 credits of electives	By the end of Year 3
Scholarly Activity Requirement: Conference Presentation and Journal Manuscript Acceptance for Publication	Completed by the semester prior to graduation or earlier
Fourth Annual Evaluation	Spring semester of Year 4
Fifth Annual Evaluation	Spring semester of Year 5
Apply for Graduation with the University	Beginning of final semester
Dissertation Defense	Final semester
Submit Approved Final Ph.D. Dissertation	Final semester; students must follow University manuscript clearance deadlines

4 Academic Policies

All students are required to adhere to the policies of the university, the FAMU-FSU College of Engineering, and the CBE Department. It is the student's responsibility to be familiar with these policies and to refer to them throughout the conduct of studies. These policies include academic policies, graduation requirements, and thesis and dissertation guidelines.

Major university requirements and policies are briefly discussed in Section 5, but students are encouraged to review the most current policies and procedures published in the official university bulletins and websites:

[FSU Graduate Bulletin](#)

[FAMU Graduate Academic Policies and Procedures](#)

4.1 Academic Performance

Once enrolled in a CBE graduate program, the student must satisfy the following requirements for retention:

Maintain a cumulative GPA of at least 3.0 to be in good academic standing. If a student's GPA falls below 3.0, the student will be placed on academic probation. If a student on academic probation does not attain a 3.0 cumulative FSU GPA by the end of the next full term of enrollment, the student will be placed on academic dismissal.

No grade below a "C" will be credited towards graduate degree requirements.

Only one "C" will be credited towards graduate degree requirements.

4.2 Transfer Credits

Transfer of credit from another regionally accredited institution is limited to six (6) semester hours toward the M.S. degree and requires departmental approval. Only graduate courses completed with a grade of B or better that have not been applied toward a previously earned degree are eligible for transfer. Acceptance of transfer credit is subject to departmental review and University policies and does not reduce the University's residency requirement for the master's degree.

For Ph.D. students who have earned an M.S. degree in the same field as their Ph.D. program, the University does not allow previously completed M.S. coursework that was applied toward the master's degree earned to be transferred as Ph.D. program credit. However, the department may consider waving up to six (6) credit hours of elective requirements in recognition of relevant graduate coursework completed during the student's prior M.S. degree.

To initiate the review process, the Ph.D. student must submit a request via email to the Graduate Coordinator. The Graduate Committee will review the request and make a final determination based on the submitted supporting documentation, which should include the course syllabus for each requested course and an unofficial transcript from the institution where the M.S. degree was completed.

4.3 RCR Training

M.S. Thesis and Ph.D. students are required to successfully complete Responsible Conduct of Research (RCR) training as part of the degree requirements in the department. This training must be completed by the end of the first semester of the initial enrollment in a CBE graduate program.

M.S. Thesis and Ph.D. students need to confirm that they have completed RCR training in a timely manner and note this completion in their plan of study and annual evaluations. Students also need to share a copy of the certificate by the end of the first semester to the graduate coordinator.

Ph.D. students who completed RCR training as M.S. students at the FAMU-FSU College of Engineering do not need to repeat this training. It is essential that students understand the basic ethical standards behind doing research before they start doing research. The RCR training can be required for certain funded projects as well.

FSU students have two options: take a workshop or enroll in the CITI training. Please visit the [Research Integrity, Security and Ethics website](#) for more information.

FAMU students have just one option: the CITI training. Please visit the [Responsible Conduct in Research Training website](#) for more information.

We recommend doing the CITI training option for both FAMU and FSU students because it is less time-consuming. Students can easily enroll themselves with their FAMU or FSU credentials.

The RCR training is optional for M.S. non-thesis students who generally just take courses, but we do encourage them to complete the training as well.

4.4 Academic Advising

All graduate students must meet with their major professors (faculty advisors) each semester during the registration period. The meeting may be a face-to-face meeting, email, phone or online conferencing. First-semester students who have not selected an advisor can meet with the CBE Graduate Coordinator (course-based(non-thesis) M.S.) or Graduate Director (thesis M.S. or Ph.D.).

4.5 Annual Assessment of Progress

All M.S. Thesis and Ph.D. students must report on their research progress at least once each year to the supervisory committee. The annual review meeting takes the form of an oral presentation before the committee members, typically during the spring semester. The student will receive this annual assessment in writing; feedback addresses the research plan, progress toward completion, and oral and written communication skills. The instructions and the form for the annual evaluation can be found in the CBE graduate students Canvas site. Students with teaching assistantship (TA) or research assistantship (RA) also will receive written assessments on their performance of their duties by their supervisor.

5 University Requirements and Policies

University requirements and policies are provided by [FAMU Graduate Academic Policies and Procedures](#) and by [FSU Graduate Bulletin](#).

5.1 Full-time Student Enrollment Requirement

Nine (9) credit hours per semester is considered a full-time load for students with teaching or research assistantship appointments with 20 hours a week workload. For international students, at least nine (9) credit hours per semester is considered full-time.

After passing the preliminary examination for Ph.D. candidacy, a Ph.D. student who has not made a final dissertation submission shall include in the required full-time load a minimum of two (2) credit hours of dissertation per semester until completion of the degree.

M.S. students do not have to be continuously enrolled in 2 credit hours of thesis research every semester. The expectation is to complete at least 6 credit hours of thesis research and be enrolled in at least 2 credits of thesis research in the final semester.

Any student (M.S. Thesis or Ph.D.) should take a minimum of two (2) credit hours of thesis or dissertation in the semester of the final defense.

A funded CBE graduate student is typically required to register for only nine (9) credit hours in a

term where an assistantship is awarded. When registering for less than 9 credit hours permission for an underload is required from Dean's office.

5.2 Continuous Enrollment

Students who are not actively participating in research are allowed to skip one semester without having to reapply for admission through the university (e.g., take courses in fall and spring and take time off in summer). Students who skip more than one semester consecutively will need to reapply for admission through the university. The minimum dissertation enrollment requirement (at least two credits per semester) still applies to PhD candidates who are actively participating in research or using university resources. See Section 5.1 for more information.

5.3 Dropping a Course

After Enrolling Graduate students must be enrolled in 9 credit hours to receive a tuition waiver. If you choose to drop a course during drop/add, you must enroll in enough hours to meet the minimum, or your waiver will be canceled. If you want to drop a course after the initial drop/add period, the approval of the Dean for Graduate Studies, your Ph.D. Major Professor (Faculty Advisor), and the course instructor is required. Failure to receive prior approval may result in loss of your tuition waiver from the department. After the first week drop-add period, students are unable to drop courses online registration system. Instead, the graduate coordinate will need to process the required college late drop/add form on behalf of the student.

5.4 Scholarly Engagement

The purpose of the Scholarly Engagement requirement is to ensure that doctoral students are active participants in the scholarly community. To meet the Scholarly Engagement requirement, doctoral students should interact with faculty and peers in ways that may include enrolling in courses; attending seminars, symposia and conferences; engaging in collaborative study and research beyond the University campus; and utilizing the library, laboratories and other facilities provided by the University. The goal is to prepare students to be scholars who independently can acquire, evaluate and extend knowledge, as well as develop themselves as effective communicators and disseminators of knowledge.

5.5 Time to Completion (university requirements)

For M.S. students, all work towards the degree must be completed within Seven years in both FAMU and FSU from the time the student originally registers for graduate studies. For doctoral students, all requirements for the Ph.D. degree must be completed within seven years ([FAMU](#)) or five calendar years ([FSU](#)) from the time the student passes the Ph.D. Preliminary Examination based on the current university policies.

5.6 International Students

International students must comply with the U.S. Department of Homeland Security rules and regulations. International students enrolled at FAMU are encouraged to consult with the [FAMU Office of International Education and Development](#). International students enrolled at FSU are encouraged to consult with the [FSU Center for Global Engagement](#).

5.7 University-Wide Standards for Teaching Assistants

5.7.1 Center for the Advancement of Teaching (CAT).

All new CBE graduate students are required to complete the FSU Program for [Center for the Advancement of Teaching \(CAT\)](#) online TA training if they are to be assigned to teaching assistant (TA) duties. This requirement is mandatory for all graduate students, regardless of whether they are classified as teaching assistants or research assistants, as their assistantship classification and funding source may change throughout their graduate program.

5.7.2 Spoken English Requirement

For international students whose home country native language isn't English, passage of the SPEAK (Speaking Proficiency English Assessment Kit) examination is a test for evaluating the English-speaking ability of non-native speakers of English by [Center for Intensive English Studies](#). Generally, the SPEAK test is required for all funded TAs. However, all new CBE graduate students are required to complete the SPEAK test requirement regardless of their current funding status. This ensures that students who are not initially funded but may be assigned TA responsibilities in the future have satisfied the required eligibility criteria in advance.

A minimum speaking score of 45 is required for students to be eligible to perform Level 1 course TA duties. Students who receive a speaking score below 45 must successfully complete the required English for Academic Purposes (EAP) course before being assigned Level 1 TA responsibilities.

For Level 2 Lab TA assignments, students must achieve a minimum speaking score of 50 to be eligible for this role. Students with a speaking score below 50 must complete the required EAP course before serving as a Level 2 Lab TA.

The SPEAK test is normally conducted via schedule zoom meeting with the office of the Center for Intensive English Studies in FSU. As a joint college, FAMU students could attend the FSU SPEAK test as well.

6 Offered Courses

A list of courses offered by CBE is provided in the university general bulletins and also listed in the [department website](#). Students are responsible for checking the graduate edition of the general bulletin for the university in which they are enrolled to confirm course information:

FAMU students please visit the [Academic Catalog website](#).

FSU students please visit [graduate bulletin](#).

Classes with insufficient enrollment are subject to cancellation. Students are encouraged to sign up for classes early in the registration period. Through the FAMU-FSU Cooperative Program, students at either university may take a class at the other parent university if that course is not offered at their home university in a given semester.

7 Checklist for New Students

7.1 FAMU Students

Refer to the FAMU School of Graduate Studies and Research for information on requirements at The School of Graduate Studies and Research

7.2 FSU Students

The Graduate School at FSU provides an information packet and checklist for new graduate students at [its website](#). In addition, an orientation for new graduate students is held each August.

International students enrolled through FSU are encouraged to consult with [the Center for Global Engagement](#).

7.3 All Graduate Students

College and department orientations are held each Fall on Thursday of the week preceding the start of classes. Attendance is expected for all new graduate students. Advising for Fall course registration is conducted during the departmental orientation. Students are expected to finalize their Fall course schedules by the end of the University's Drop/Add period during the first week of classes. All new graduate students, regardless of funding status, are required to complete the required Teaching Assistant (TA) training before the Fall semester deadline. In addition, international students whose native language is not English and who will serve as Teaching Assistants must pass the Speaking Proficiency English Assessment Kit (SPEAK) examination before the Fall semester deadline.

See the College Computing Services (CCS) in Room A332 to request an engineering account, which is required to access the public computers at the College of Engineering.

8 Required Forms

All departmental forms are available on the CBE Graduate Students Canvas site and may also be obtained from the graduate coordinator via email. All forms must be completed and signed electronically. The department recommends using DocuSign to obtain the required signatures. Once all required signatures have been obtained, the completed forms should be submitted electronically to the Graduate Coordinator for departmental records.

Forms for all graduate students:

- Major Professor (Faculty Advisor) Selection Form (department form)
- Thesis Supervisory Committee Form
- Doctoral Dissertation Supervisory Committee Form
- Graduate Student Annual Evaluation Form (M.S. Thesis and Ph.D. Students)
- Preliminary Exam Outcome Assessment Form and Student Self-Assessment Form (department form)
- College Admission to Candidacy Form
- Prospectus Defense Outcome Assessment Form (department form)
- Thesis Defense Outcomes Assessment Form (department form)
- Dissertation Defense Outcome Assessment Form and Student Self-Assessment Form (department form)

- FAMU Defense Outcome
- FSU University Representative Doctoral Defense Report (online)
- FSU Manuscript Signature (online)
- TA Evaluation and TA Workload Evaluation Form (department form)
- Annual Survey and Exit Survey (online)
- College Drop Add Form
- FAMU Exception Form
- Major Change Form

9 Funding and Assistantships

9.1 Tuition Waivers

Students employed by the University through a Research Assistantship (RA) or Teaching Assistantship (TA) receive a tuition waiver each semester when enrolled full time. Students supported by a fellowship administered through the University are also eligible for a tuition waiver when enrolled full time.

For FSU students, full-time enrollment for tuition waiver eligibility is 9 credit hours per semester. For FAMU students, full-time enrollment is 9 credit hours during the Fall and Spring semesters and 6 credit hours during the Summer semester.

Students who are not enrolled full time, are self-supported, receive external funding, or hold a fellowship not administered through the University are not eligible for a tuition waiver.

9.2 Health Insurance Benefits

Eligible Graduate Assistants (GAs), including students appointed as Teaching Assistants (TAs) and Research Assistants (RAs), may receive a health insurance subsidy to help offset the cost of the University-sponsored student health insurance plan. The subsidy is provided through the Graduate School and is available to qualifying graduate assistants, including both domestic and international students.

To be eligible for the health insurance subsidy, graduate students must:

- Maintain an eligible Graduate Assistant appointment (0.5 FTE), including a TA or RA appointment;
- Be enrolled in the required number of graduate credit hours: nine (9) credit hours each semester for FSU students; nine (9) credit hours during the Fall and Spring semesters and six (6) credit hours during the Summer semester for FAMU students.
- Enroll in the eligible University-sponsored student health insurance plan; and
- Maintain all eligibility requirements throughout the semester.

For information regarding the University's Health Insurance, please visit [FAMU Health Services](#) or visit the [FSU Student Health Insurance website](#).

For Health Insurance Benefits, please visit [FAMU Health Insurance Waiver](#) site or [FSU Health Insurance Subsidy Benefit website](#).

9.3 Teaching & Research Assistantships

A limited number of teaching assistantships (TA) and research assistantships (RA) are available through department of chemical and biomedical (CBE) to graduate students on a competitive basis each semester, with first preference given to Ph.D. students and candidates. The Department has limited funding available for TA positions, especially for the Summer semester.

For both TA and RA positions, students must coordinate closely with the Major Professor (Faculty Advisor) and the Department regarding funding, responsibilities, academic progress, and performance expectations.

Graduate assistants appointed at 0.50 FTE (20 hours per week) may be eligible to receive a university tuition waiver, subject to university policies and funding availability. Students receiving University Graduate Fellowships are expected to perform teaching and/or research duties equivalent to a 20-hour-per-week appointment.

9.3.1 Funding Duration:

Departmentally funded Ph.D. students are normally eligible to receive up to five years of combined TA and/or RA support, provided they remain in good academic standing, make satisfactory progress toward their degree, and funding remains available.

9.3.2 Teaching Assistant Performance:

All Teaching Assistants are required to complete the CBE TA Workload Evaluation Form at the end of each semester. In addition, the supervising instructor will complete a TA performance evaluation. If a Teaching Assistant receives an Unsatisfactory performance evaluation, the Department will meet with the student to review the evaluation, discuss expectations for improvement, and determine any appropriate actions regarding future TA appointments.

9.3.3 Research Assistant Performance

Research Assistants are expected to make satisfactory progress toward their assigned research responsibilities and degree requirements. The Major Professor (Faculty Advisor) will evaluate the student's research performance, progress, and fulfillment of assigned responsibilities as part of the annual evaluation process. If a Research Assistant's performance is determined to be unsatisfactory, the Major Professor and the Department will meet with the student to discuss expectations for improvement and determine appropriate actions regarding continued RA support.

9.4 Departmental Continuation and Funding Eligibility Beyond Five Years

A typical Ph.D. degree is obtained in 5 years. Students continuing beyond five years must petition for program continuation. Students about to enter their sixth year in the program (or longer) are required to be reviewed by CBE Graduate Committee for continuation of Department support beyond their fifth year. Continuation with Departmental financial support (tuition waiver, health care supplement, and teaching assistantship or research assistantship) is not guaranteed beyond five years. Please be aware that the Department rarely provides funding beyond year six, and any student beyond six years in the degree will be considered a "Student Not in Good Standing." If there is a likelihood of needing continued support, a petition should be submitted.

University rules dictate that a doctoral candidate must defend their dissertation within five (5) calendar years of passing the Preliminary Exams. As such, the denial of Continuation of Support only pertains to the funding of the graduate student tuition and salary and not to the ability to pursue a Ph.D. Degree. If a student's request for Continuation is denied, the student may remain in the program but will be required to pay tuition without waivers at the full-time student rate. In addition, the student cannot be employed as a teaching assistant or a research assistant within the Department of Chemical and Biomedical Engineering.

9.5 Loss of Department Funding

Loss of Departmental Funding Support will result in the student not being eligible for direct departmental support in the form of a teaching assistantship, tuition waiver or any health insurance subsidy. Loss of Departmental funding can occur for students receiving a "Not in Good Standing" evaluation, failure to uphold the professional expectations of the department, failure to complete degree milestones on time, not receiving a Ph.D. within five years, or failure to comply with safety regulations. Loss of Departmental funding requires approval by the faculty following the Graduate Committee. The Loss of Departmental funding can be appealed to the Chair of the Department.

9.6 Student Employment Outside of the Department

To ensure successful completion of the graduate research education plan, which includes coursework, dissertation research, and assigned graduate assistantship (GA) responsibilities such as Teaching Assistant (TA) or Research Assistant (RA) duties, funded graduate students are strongly encouraged not to pursue employment outside the department. Any student who wishes to accept outside employment must first consult with their Major Professor (Faculty Advisor) to discuss potential impacts on their academic progress, research responsibilities, and assistantship obligations.

9.6.1 Domestic funded graduate assistants (GAs):

Students must comply with applicable University Human Resources policies regarding outside employment. According to HR policy, *"Any outside employment, additional employment, or other activities that interfere with an employee's obligations to the University or that constitute a conflict of interest are prohibited."* To determine whether proposed outside employment creates a conflict of interest, the GA must provide written details of the employment, including job responsibilities, expected work hours, and a plan explaining how they will fulfill their assigned assistantship duties, coursework requirements, and other University obligations.

9.6.2 International graduate assistants (GAs):

International students are generally restricted from accepting employment outside the University due to federal immigration regulations. Students should consult with the International Students office for guidance regarding employment eligibility and applicable restrictions.

9.7 Other Funding Sources

In addition to department sources of financial support, the universities and external organizations provide fellowships for graduate study.

Students are encouraged to explore the following resources:

FAMU School of Graduate Studies and Research compiles information about fellowships provided by

FAMU and external sources. See the link to [Financial Aid and Funding Opportunities](#))
FSU [Office of Graduate Fellowships and Awards](#) provides information about external fellowships.
College of Engineering provides information about scholarships and fellowships at the website [here](#)

Graduate students, particularly Ph.D. students, are strongly encouraged to apply for prestigious external fellowships. In addition to providing financial support, these awards enhance a student's academic credentials and professional development. Examples of major fellowship programs include:

National Science Foundation (NSF) Graduate Research Fellowship Program ([GRFP](#))

[U.S. Department of Energy \(DOE\) Office of Science Graduate Student Research \(SCGSR\) Program](#)

National Institutes of Health ([NIH](#)) Fellowship Programs (for eligible biomedical and health-related research)

[US Environmental Protection Agency](#)

9.8 Graduate Assistantship GPA Requirements

To remain eligible for graduate assistantship funding (Teaching Assistantship [TA] or Research Assistantship [RA]), students must maintain good academic standing, defined as a minimum cumulative GPA of 3.0.

9.9 Travel Support for Graduate Students

9.9.1 CBE Departmental Research Day Award

The Department will announce the CBE Graduate Research Award as part of the CBE Departmental Research Day. Based on oral and/or poster presentation at this event, the award recognizes excellence in graduate student research. Each recipient will receive a financial award, which can be used for presenting a paper in a conference. The award money can be used any time during the 12-month period following the award date. Generally, two students are awarded based on oral and poster presentation performance.

9.9.2 Graduate Student Conference Travel Funding Request

The Department will provide competitive travel awards to support graduate students who present their research at national and international professional conferences.

9.9.2.1 Eligibility

Applicants must meet all the following eligibility requirements:

- Be enrolled as a full-time, degree-seeking Ph.D. or M.S. Thesis student in the Department of Chemical and Biomedical Engineering.
- Be presenting a poster or oral presentation at a nationally or internationally recognized professional conference, subject to departmental approval.
- The presentation must be directly related to the students' thesis or dissertation research.
- Submit documentation confirming acceptance of the poster or oral presentation.
- Provide an estimated travel budget.
- Comply with all departmental and university travel authorization policies and submission deadlines.
- Obtain written approval from the Major Professor (Faculty Advisor) confirming:

- that sufficient funding from other sources is not available, and/or
- identifying any additional funding sources that will be used to cover remaining travel expenses.

9.9.2.2 Award Amount

- Up to nine (9) travel awards may be awarded during each 12-month fiscal year. The amount of the awards will be determined on availability of funds.
- The number of awards is also subject to the availability of departmental funds.

9.9.2.3 Award Process

Applications are reviewed on a rolling basis throughout the fiscal year. Funding is awarded until the annual allocation has been exhausted. Once available funds have been committed, additional applications will be considered during the next funding cycle.

To provide support throughout the academic year, the department will make every effort to distribute awards across the fall, spring, and summer terms.

9.9.2.4 Funding Priority

When eligible applications exceed available funding, priority will generally be given in the following order:

- 1) Ph.D. candidates who have successfully completed the dissertation prospectus (post-prospectus defense).
- 2) Ph.D. students who have completed the preliminary examination but have not yet defended the dissertation prospectus.
- 3) Ph.D. students who have not yet completed the preliminary examination.
- 4) M.S. Thesis students.

9.9.2.5 Additional Information

Receipt of a departmental conference travel award does **not** affect a student's eligibility to receive other travel awards, including travel funding earned through departmental Research Day competitions or other university-sponsored travel programs.

10 Contact Information

For more information about graduate studies in the Department of Chemical & Biomedical Engineering at the FAMU-FSU College of Engineering, please contact:

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