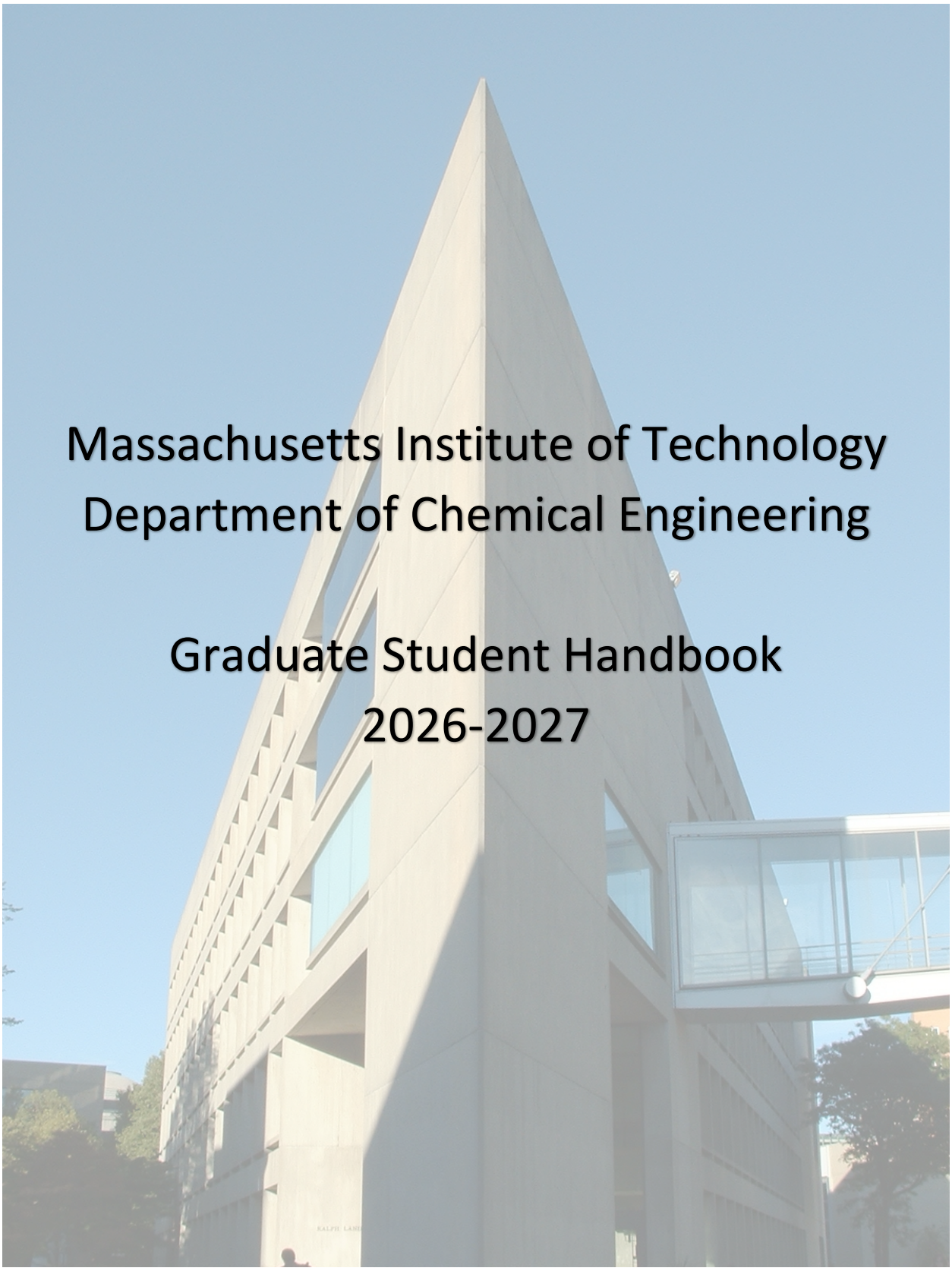

Massachusetts Institute of Technology
Department of Chemical Engineering

Graduate Student Handbook
2026-2027

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Part I: The Department

The most important departmental guidelines and policies are presented in this handbook. In addition, the MIT Office of Graduate Education's (OGE) webpage on Graduate Policies and Procedures https://oge.mit.edu/gpp/ and the MIT Bulletin (aka course catalog) http://catalog.mit.edu/, cover Institute-wide policies, procedures, and regulations.

The Graduate Committee Chair (referred to hereafter as the Graduate Officer), the Assistant Director of Academic Programs, and the Graduate Academic Programs Specialist are valuable sources of information and support for graduate students. If you have problems or questions at any time during your graduate school tenure, we encourage you to contact the Assistant Director of Academic Programs, Melanie Charette, room 66-366, (617) 253-4577, melaniec@mit.edu, and the Graduate Academic Programs Specialist, Matthew Sweeney, room 66-366, (617) 252-2162, vsweeney@mit.edu, in the Academic Office. In addition, please feel free to contact the Graduate Officer, Professor Hadley D. Sikes, room E19-502C, (617) 253-5224, sikes@mit.edu, for advice and guidance.

Academic policy for graduate students is the responsibility of the Graduate Committee, and students should feel free to consult with its members at any time.

Graduate Committee

Prof. Hadley Sikes (Chair)	E19-502C	(617)253-5224	sikes@mit.edu
Prof. Martin Bazant	66-458b	(617)253-2701	bazant@mit.edu
Prof. Daniel Blankschtein	66-442B	(617)253-4594	dblank@mit.edu
Prof. Richard Braatz	E19-551	(617)253-3112	braatz@mit.edu
Prof. Patrick Doyle	E17-504F	(617)253-4534	pdoyle@mit.edu
Prof. Heather Kulik	66-464	(617)253-4584	hjkulik@mit.edu
Prof. Allan S. Myerson	E19-502D	(617)452-3790	myerson@mit.edu
Prof. Yuriy Román	66-558b	(617)253-7090	yroman@mit.edu
Prof. Michael S. Strano	66-566	(617)324-4323	strano@mit.edu
Prof. William Tisdale	66-458A	(617)253-4975	tisdale@mit.edu

Headquarter Staff

Prof. Kristala L. Jones Prather, Department Head	kljp@mit.edu
Prof. Bradley D. Olsen, Executive Officer	bdolsen@mit.edu
Sandra Lopes, Administrative Assistant for DH	slopes@mit.edu
Timothy Xavier, Administrative Assistant for EO	xaviert@mit.edu
Barbara Travers, Director of Adminstration and Finance	barbtrav@mit.edu
Caitlin Stier, Comm Lab & Career Services Manager	cstier@mit.edu
Bori Stoyanova, Human Resources Coordinator	bori@mit.edu
Christelle Hayles, DEI Specialist	cmhayles@mit.edu
Melanie Kaufman, Communications Officer	melmils@mit.edu

Brian Smith, EHS Coordinator	bssmith@mit.edu
Chris Monaco, Facility Manager	monacoc@mit.edu

Academic Office Staff

Melanie Charette, Assistant Director of Academic Programs	melaniec@mit.edu
Matthew Sweeney, Graduate Academic Program Specialist	vsweeney@mit.edu
Adrienne Bruno, Undergraduate Academic Program Specialist	brunoa@mit.edu

Chemical Engineering Library Guide

Phoebe Ayers, Interim Chemistry and Chemical Engineering Librarian
Room # 10-405 , Phone # 617-253-4442, psayers@mit.edu
http://libguides.mit.edu/chemeng

Chemical Engineering Offices (and other important rooms)

Headquarters	66-350
Academic Office	66-366
Practice School Office	66-370
Communications Lab	66-380
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DICE Lounge	66-240
Undergraduate Lounge	66-258
Undergraduate Bunker	66-070
Undergraduate Labs	66-0042 & E18-676
Walker Lounge	66-201

Part II: Incoming Students

English Evaluation Test

Entering international graduate students are required to take the English Evaluation Test, which identifies potential challenges with communication skills that may hinder coursework, teaching, and research at MIT (https://cmsw.mit.edu/english-evaluation-test-eet/). Any recommended English course based on the results of the test must be taken in the first year.

Proficiency in Writing

Every new Graduate Student is required to the take the Graduate Writing Skills Examination (http://cmsw.mit.edu/graduate-writing-exam/) the summer before starting at MIT. The Examination consists of two essays of 750–1250 words based on online readings. You will have one week to write the two essays and submit them online. Based on the examination results, recommendations for helpful coursework may be made by the MIT Writing Program.

Each Graduate Writing Exam is assessed by two readers to determine the degree to which the analytical summaries revealed an understanding of the conventions of academic writing,

including:
- Comprehensiveness: offering an appropriately objective overview of the material.
- Synthesis: synthesizing the salient points of all five articles.
- Organization: organizing information logically, coherently, and analytically.
- Paraphrase Accuracy: paraphrasing authors' language concisely and accurately.
- Citation: citing sources accurately and fully.
- Style and Discourse: using clear, correct, and engaging prose.

A score between 30-100 is assigned to each essay based on the combined overall scores of the two readers. Students who score 80 or above on this exam show sufficiently developed abilities in all of these areas, with higher scores clearly indicating better performance. For students who score lower than 80, general information about writing performance at each level is presented below:

75: Generally clear prose at a sentence level and accurate citation and paraphrase of sources. Exams at this level reveal weaknesses in focus and organization when working with complex scholarly sources; e.g., limitations in organizing material conceptually, synthesizing material from multiple sources, or highlighting the central information from the sources

60: Exams at this level reveal weaknesses in focus and organization; e.g., limitations in organizing material conceptually, synthesizing material from multiple sources, or highlighting the central information from the sources. In addition, these exams show a lack of clarity in syntax or word choice

40 – 50: Exams at this level reveal limited familiarity with the conventions of academic writing — limitations in organizing material conceptually and logically, presenting information clearly and objectively, and accurately representing the information in the articles. These exams also reveal a pattern of grammatical weakness.

30: However well written otherwise, exams at this level reveal significant weaknesses with accurate paraphrasing and citation of the sources.

Students are notified by the Academic Office during the summer of their scores. Students who receive a score of less than 80 on the exam are required to take 21W.794, "Graduate Technical Writing Workshop", a writing class offered during IAP.

Students with an undergraduate degree from MIT are not required to take the writing examination. For any inquiries about the MIT Writing Program, including the results of the writing examination, please contact the Assistant Director of Academic Programs in the Academic Office.

Part III: Advising

For incoming first-year graduate students, academic advisors are members of the Graduate Committee.

Students join a research group at the end of their first fall semester in the Department, at which point their research advisor becomes the student's academic advisor. Should the student choose a research advisor from another department, they will also need a co-advisor from the Chemical Engineering faculty who is prepared to assume sole advisory responsibility if, for some reason, the relationship with the research advisor ends. Students are responsible for informing the Academic Office in writing of any change in advisor(s).

Prior to Registration Day (both in the fall and spring semesters), pre-registration subject selection must be made online, and then approved by the advisor, online. Advisor approval should be obtained for any subsequent add or drop of subjects during the term (no additional authorization is required). Summer registration is approved by the Assistant Director of Academic Programs.

Selection of Research Topic/Research Advisor(s)

First-year doctoral students take a department seminar series (10.990) during the fall semester to inform the students about faculty research interests to aid them in selecting a research advisor. First-year MSCEP students are not required to take 10.990. Although PPSM students are not required to take 10.990, they are encouraged to attend those seminars that are of interest to them. First-year PhD/ScD and PhDCEP students are required to attend **ALL** 10.990 faculty presentations. Attendance is recorded and monitored.

First-year doctoral students are also required to arrange meetings with at least six faculty members to discuss possible research topics. Those meetings are acknowledged by faculty signatures on the Advisor Selection Form provided by the Academic Office (see page 47 and online https://cheme.mit.edu/resources/student-resources/).

Each student should select two research projects by the end of the fall semester, and indicate their selection on the form provided by the Academic Office, including securing a signature from the 1st choice research advisor. The Department Head will make every effort to grant each student their first choice, within funding and space limitations. Students will be notified of their research advisor(s) assignment by mid-January. The Department cannot guarantee that a research advisor will be found for every student. However, serious efforts will be made by the Department Head and the Graduate Officer to assist any student who has difficulty identifying a research advisor.

For SM degree candidates, the selection of a research advisor may be made at any time with the joint agreement of the student and a faculty member. PPSM students should contact their program advisor for information on the research advisor selection process.

Occasionally, a research project does not proceed according to the expectations of the student, the research advisor(s), or both. Early recognition of the possibility of switching topics and/or research advisor(s) is an important factor in successfully managing this process. Any student contemplating a change of research advisor(s) should contact the Graduate Officer and/or the Assistant Director of Academic Programs, Melanie Charette, for consultation and assistance. If a

change in research advisor(s) has been made, the student and faculty member should notify the Academic Office of this change in writing.

Important dates for advisor selection in 2026

Students must collect at least 6 faculty signatures by November 6th
Faculty may begin to sign on students on November 16th
Completed advisor selection form due to the Academic Office by December 18th

Part IV: The Academic Programs

The Doctoral Programs (PhD/ScD and PhDCEP)

There are two distinct programs (PhD/ScD and PhDCEP) leading to the doctoral degree in the Chemical Engineering Department. The PhD/ScD program emphasizes the research experience while the PhDCEP program provides a blend of engineering science and business/management education along with research experience. In the rare event that an enrolled student wishes to enter a doctoral program different from the one to which he/she was originally admitted, the student must re-apply to the Chemical Engineering Graduate Admissions Committee. Applications to the PhDCEP Program are reviewed by both the Chemical Engineering Graduate Admissions Committee and the corresponding admissions body at the Sloan School of Management.

*There is no difference between the PhD and the ScD degrees, except for the designation on the diploma and the color of the hood at Commencement.

Program in Polymers and Soft Matter (PPSM)

This section is intended to summarize the expectations of the Department of Chemical Engineering for students in PPSM who intend to receive a PhD/ScD degree in Chemical Engineering. Except where noted, such students are expected to adhere to the policies and procedures described in this Handbook. Questions should be directed to the Academic Office (room 66-366, (617)253-4577), or to the PPSM Office https://polymerscience.mit.edu (room 76-253, (617)253-0949).

The following guidelines apply:

1. The PPSM core curriculum replaces the four core subjects (10.34, 10.40, 10.50, and 10.65) and the Biology Requirement of the Department of Chemical Engineering.
2. Students in PPSM must take three subjects in Chemical Engineering, in addition to those that are part of the PPSM core curriculum, in order to satisfy the Minor Requirement. Two of these three subjects must be from the Chemical Engineering core curriculum (10.34, 10.40, 10.50, or 10.65). A grade of "B-" or higher must be received in every course taken to satisfy the Minor requirement.
3. 10.960 satisfies the seminar requirement each Fall and Spring semesters for PPSM students. During their first Fall semester at MIT, PPSM students are strongly encouraged to attend 10.990 seminars delivered by PPSM faculty and affiliates.

4. First-year students are required to meet with at least five faculty or affiliates of PPSM to discuss possible research topics. Each faculty should sign a form provided by the PPSM office. The selection of a research advisor(s) should be made in consultation with the PPSM Director Prof. Alfredo Alexander-Katz (617-452-2238, aalexand@mit.edu), typically by the end of the first Fall semester. The Graduate Academic Programs Specialist in the Academic Office must also be informed of any selection of research advisor(s).
5. The Thesis Committee should consist of two or more members, in addition to the research advisor. At least two of these must be faculty members in Chemical Engineering. The research advisor serves as the Thesis Committee Chairperson. The research advisor need not be a faculty member in Chemical Engineering, but in this case, a pro-forma ChemE co-research advisor is required.
6. PPSM students admitted by the Department of Chemical Engineering are required to serve as a Teaching Assistants (TA) for one term in the Department, normally in a 10-XXX subject. Two possible semesters of availability for the TA draft are identified by the student at the time of the Thesis Proposal Presentation Meeting, by completing the appropriate section in the Report of Thesis Proposal Presentation Meeting Form. Both the student and the research advisor(s) must sign this section of the Form.
7. The Qualifying Examination administered by the PPSM faculty replaces the Chemical Engineering Qualifying Examination. The PPSM Qualifying Examination is offered once a year, at the end of the spring semester. Requests to take the PPSM Qualifying Examination should be made in writing to the PPSM Director by April 15. The written portion of the PPSM Qualifying Examination consists of five or six one-hour questions split into two sessions, with a break in between. The oral portion of the PPSM Qualifying Examination involves responding to two or three questions posed by the PPSM faculty in a single 45-minute session. The PPSM Qualifying Examination covers material presented in the first two semesters of the PPSM core curriculum, as well as general knowledge of an introductory nature in the area of polymer science and engineering.

Interdisciplinary Doctoral Program in Computational Science and Engineering via the Department of Chemical Engineering (ChemE-CSE PhD Program)

1. ChemE-CSE PhD students must complete the Chemical Engineering core curriculum (10.34, 10.40, 10.50, and 10.65), the Chemical Engineering Biology Requirement, and one additional graduate level subject in Course 10.
2. ChemE-CSE PhD students must complete four graduate subjects from the Center for Computational Science & Engineering's (CCSE) approved list of computational concentration subjects (which is called the "Program of Study" by CCSE). These classes also satisfy the Chemical Engineering Minor Requirement. A grade of "B-" or higher must be received in every course taken to satisfy the Minor requirement. In addition to departmental academic performance expectations, ChemE-CSE students are expected to maintain a grade point average (GPA) of at least 4.5 (out of 5) in CSE subjects and an overall GPA of at least 4.2 (out of 5) during the course of their studies.
3. During their first fall semester at MIT, ChemE-CSE PhD students are required to attend 10.990 seminars.

4. Beginning in their first spring semester at MIT, ChemE-CSE PhD students are required to attend 10.991/10.992 seminars.
5. First-year ChemE-CSE PhD students are required to meet with at least six faculty to discuss advisor selection and possible research topics. Each faculty should sign a form provided by the ChemE Academic Office (see page 47).
6. The Thesis Committee should consist of two or more members, in addition to the research advisor. At least one of these must be a faculty member in Chemical Engineering. Additionally, one of the two following conditions must be met: *either* a CCSE PI must serve as the Thesis Committee Chairperson & Research Advisor, *or* two CCSE PIs must serve as members of the Thesis Committee (if the research advisor is not a CCSE member).
7. ChemE-CSE PhD students are required to serve as a Teaching Assistant (TA) for one term in the Department, normally in a 10-XXX subject. Two possible semesters of availability for the TA draft are identified by the student at the time of the Thesis Proposal Presentation Meeting, by completing the appropriate section in the Report of Thesis Proposal Presentation Meeting Form. Both the student and the research advisor(s) must sign this section of the Form.
8. ChemE-CSE PhD students take the Chemical Engineering Qualifying Examination (see page 20).
9. ChemE-CSE students are required to notify the CCSE assistant director (Kate Nelson; kpnelson@mit.edu) of the outcome of all qualifying examinations and to provide CCSE a copy of the thesis proposal.
10. ChemE-CSE doctoral candidates are required to provide a thesis defense announcement to CCSE by emailing it to Zhao Xian via zxian@mit.edu.
11. In addition to departmental approval, the final thesis needs to be submitted to and approved by CCSE. To that end, ChemE-CSE doctoral candidates must a) have the thesis title page reviewed and approved by the CCSE assistant director prior to submission and b) must copy the CCSE assistant director when submitting the final completed thesis document.

Master's Degree In Chemical Engineering Practice (MSCEP)

The Chemical Engineering Department at MIT offers a unique graduate program that combines coursework with problem solving in an industrial setting. Students normally spend two semesters (not necessarily consecutively) in the Chemical Engineering Department at MIT to satisfy subject requirements, and one semester split between two industrial field stations engaged in project work which is accepted in lieu of an SM thesis. Students pursuing the Practice School option are generally divided into two categories: (1) Master's-only candidates, (2) doctoral candidates. Over the past decade, about 60% of the departmental doctoral students have selected the Practice School program as an interim degree enroute to their PhD/ScD.

Matriculated graduate students in the Department can apply to the School of Chemical Engineering Practice by completing a Practice School application form stating intent to participate in the program. Typically, students entering in the fall semester complete their application by

December 1 for placement in the following summer, fall, and spring sessions. Practice School applications can be completed on-line http://web.mit.edu/cheme/academics/practice/form-1.html

Requirements for a Master's Degree in Chemical Engineering Practice (MSCEP)

The Practice School station assignments are offered 3 times per year, during the fall, spring, and summer terms, and the distribution of subject and project requirements depends on the semester of attendance at the Practice School Station. Those students attending either the fall or the spring sessions complete four 12-unit projects, while students attending the stations during the shorter summer session (13-week program vs. 16-week program) complete only three projects, and make up the remaining credit units by doing additional coursework. Each Practice School project is rated as two 0-6-0 subjects, grades being given independently for technical performance and for non-technical aspects of the project execution. Proficiency in certain core areas of Chemical Engineering is required for the MSCEP degree. The course requirements with credit units are listed in the Table below.

Course		Credit Units			
		MSCEP-Only		PhD Candidates	
		Summer	Fall/Spring	Summer	Fall/Spring
Thermodynamics	10.40	12	12	12	12
Heat and Mass Transfer	10.50	12	12	12	12
Reaction Engineering	10.65	12	12	12	12
Numerical Methods	10.34	12	12	12	12
Systems Engineering	10.551	9	9	9	9
Project Management and Problem Solving	10.801	6	6	6	6
Applied Process Chemistry Elective	See list below	9+	9+	18+	9+
Undergraduate Process Design	Course from Undergraduate Institution, *or* 10.390, 10.490, 10.491 at MIT	-	-	-	-
Practice School Projects	10.80-10.85	36	-	36	-
	10.80-10.87	-	48	-	48
TOTAL Units		108+	120+	117+	120+

Elective options: 10.25, 10.391J, 10.392J, 10.51, 10.524, 10.542, 10.544, 10.545, 10.568, 10.569, 10.571J, 10.580, 10.585, 10.586, 10.595, 10.625J, 10.626, 10.652J, 10.677, 10.689, 10.817J (others are also allowed with consent of the Practice School Director)

Graduate-level subjects taken outside the Department may be accepted in lieu of the above subject requirements with the consent of the instructor teaching the appropriate subject, and of the Practice

School Director. In such cases, credit unit requirements must be satisfied with other graduate-level technical subjects approved by the Practice School Director.

Arrangements While at Practice School

Financial support for students enrolled in the Practice School program is available. Funding from a group of Sponsoring Companies and from a Practice School Alumni/ae Endowment Fund is used to support students while in residence at MIT, normally limited to one semester of support for each student. In addition, Practice School students may be supported by teaching assistantships, research assistantships, or external fellowships. Students at the stations receive funding with full tuition and with stipends equivalent to what would be granted at MIT, with funding from the host companies, the Practice School Endowment, or external fellowships.

Housing is provided by the host company for single and married students during the period of assignment to the Practice School Station sites.

Master's Degree With Thesis

The general requirements described in the MIT Graduate School Manual are applicable https://oge.mit.edu/gpp/degrees/masters/master-of-science. Students must complete at least 66 subject units. The four core graduate subjects (10.34, 10.40, 10.50, and 10.65) are required for the SM degree. Units that have been used to satisfy other master's program degree requirements (e.g., MSCEP) cannot be used to satisfy the 66 units required for the SM degree. 24 units of thesis should be taken, and this is in addition to the 66 units just mentioned. Thesis units in excess of 24 may not be used to satisfy subject requirements. The SM Thesis must be approved by two readers, the research advisor, and one additional Chemical Engineering faculty member.

Joint Master's Degrees

This degree is intended for graduate students who seek academic recognition in two professional fields, which, although distinct, have a substantial interdisciplinary connection.

For the Chemical Engineering portion, the student must satisfy the same subject requirements as for any SM degree offered by the Department. A total of at least 132 subject units in both Departments is an Institute requirement https://oge.mit.edu/gpp/degrees/masters/simultaneous-registration-for-two-masters-degrees/. This total does not include the required thesis units. If the student is attending Practice School, units in excess of 36 may be used to satisfy the Chemical Engineering subject requirements.

A joint SM program cannot be declared near graduation. As described in the MIT Graduate School Manual:

> Participation in a dual degree program is limited to students who are already registered in one Department and who meet the admissions criteria in the second Department. At least two regular terms prior to completion of the program, the student must submit to each Department a statement of educational objectives along

with a detailed program plan that includes a description of the proposed thesis topic. The total program must meet with the approval of each Department and a petition approved by the Dean of the Graduate School describing the program must be filed with the Registrar. The thesis research shall be done under the supervision of an approved member of one of the two participating Departments with the other Department providing a thesis reader. The research must be done on campus. The thesis must be of superior quality. The single thesis cannot be used to satisfy the requirements of any additional graduate degree programs.

If the Practice School is to be used to meet the thesis requirement, this choice must be approved by the other participating Department.

Special Graduate Students

A Special Graduate Student in Chemical Engineering is one whose intended program of study is essentially graduate in nature, but who is not a candidate for a degree. Application for this status is made to the Departmental Admissions Committee. Admission is valid only for one term; readmission must be sought each term. Other information relating to filing dates, fees, and academic performance can be found in the MIT Graduate School Manual, at the Office of the Dean for Graduate Education website: https://oge.mit.edu/gpp/registration/status/special-student/.

Part V: Program Requirements

The philosophy of the Department is to encourage students to develop an in-depth understanding of the fundamental concepts of Chemical Engineering while, at the same time, broadening their intellectual horizons by sampling other more specialized subjects.

PhD/ScD students must complete:

1. Chemical Engineering Thermodynamics (10.40).
2. Analysis of Transport Phenomena (10.50).
3. Chemical Reactor Engineering (10.65).
4. Numerical Methods Applied to Chemical Engineering (10.34).
5. Introduction to Chemical Engineering Research (10.990)
6. One 9+ units Graduate-level subject in Chemical Engineering (Course 10; with the exception that 10.08 cannot count towards this requirement); for a description of the Course 10 Graduate Electives, see http://catalog.mit.edu.
7. Departmental Biology Requirement (see page 17).
8. Departmental Minor Requirement (see page 17)

No elective course taken to satisfy the MSCEP program can be used to satisfy the elective requirement of the PhD/ScD (see item 6 above).

PPSM students must complete:

1. The PPSM Core Curriculum (http://polymerscience.mit.edu/?page_id=5482)

2. One 9+ units Graduate-Level subject in Chemical Engineering (Course 10; with the exception that 10.08 cannot count towards this requirement); for a description of the Course 10 Graduate Electives, see http://catalog.mit.edu.
3. Departmental Minor Requirement (see page 17).

ChemE-CSE PhD students must complete:

1. Chemical Engineering Thermodynamics (10.40).
2. Analysis of Transport Phenomena (10.50).
3. Chemical Reactor Engineering (10.65).
4. Numerical Methods Applied to Chemical Engineering (10.34).
5. Introduction to Chemical Engineering Research (10.990).
6. One 9+ units Graduate-Level subject in Chemical Engineering (Course 10; with the exception that 10.08 cannot count towards this requirement); for a description of the Course 10 Graduate Electives, see http://catalog.mit.edu.
7. Departmental Biology Requirement (see page 17).
8. Four Graduate-Level subjects from the Center for Computational Engineering (CCE) approved list of Computational Science and Engineering subjects (http://computationalengineering.mit.edu).

PhDCEP students must complete:

1. Chemical Engineering Thermodynamics (10.40).
2. Analysis of Transport Phenomena (10.50).
3. Chemical Reactor Engineering (10.65).
4. Numerical Methods Applied to Chemical Engineering (10.34).
5. Introduction to Chemical Engineering Research (10.990).
6. Systems Engineering (10.551).
7. One 9+ units Graduate-Level subject in Chemical Engineering (Course 10) in Applied Process Chemistry (see page 16).
8. Departmental Biology Requirement (see page 17).
9. Practice School coursework 10.80-10.85 (36 units), or 10.80-10.87 (48 units).
10. An additional elective, approved by the Practice School Director, if the student attends Practice School during the summer term, to make up for the credits of the 4th month of Practice School.

The first step of the PhDCEP program is the MSCEP program (see below). Therefore, courses which are required for the MSCEP degree are also required for the PhDCEP degree. These include the core courses (10.40, 10.50, 10.65, 10.34, 10.801, 10.990, and 10.551), the Applied Process Chemistry course, and Practice School course work (10.80-10.87). The remaining course work for a PhDCEP student who has completed the MSCEP program includes the department's Biology Requirement, and the course requirements for the first two semesters of the Sloan School MBA program, as outlined by the Sloan School. For a more detailed description of the requirements for the MSCEP program, see pages 11, 12, and 13.

Twenty-four (24) thesis credit units are required for the PhD/ScD, PhDCEP, and PPSM programs. Students registering for a thesis degree must specify a minimum of one credit unit each semester, but typically, the thesis credit is adjusted to yield a total load of 36 credit units for research assistants and teaching assistants (not including 10.990/10.991/10.992 or other 10.9XX research seminars).

MSCEP students must complete:

1. Chemical Engineering Thermodynamics (10.40).
2. Analysis of Transport Phenomena (10.50).
3. Chemical Reactor Engineering (10.65).
4. Numerical Methods Applied to Chemical Engineering (10.34).
5. Systems Engineering (10.551).
6. Project Management and Problem Solving (10.801).
7. One Graduate-Level subject in Chemical Engineering (Course 10) in Applied Process Chemistry (see page 16).
8. Additional requirements discussed on pages 11, 12, and 13.

SM students must complete:

1. Chemical Engineering Thermodynamics (10.40).
2. Analysis of Transport Phenomena (10.50).
3. Chemical Reactor Engineering (10.65).
4. Numerical Methods Applied to Chemical Engineering (10.34).
5. Additional requirements discussed on page 14.

Grading Policy

Doctoral candidates are expected to receive a grade of "B-" or higher in any subject taken to satisfy a departmental requirement, including:

- Four Core Subjects: 10.34, 10.40, 10.50, and 10.65.
- One 9+ units Graduate-Level Elective in Chemical Engineering (Course 10).
- Minor Requirement.
- Biology Requirement.
- Systems Engineering: 10.551 (required for PhDCEP and MSCEP students).

A graduate student can retake a subject only once to earn a grade of "B-" or higher. The subject must be retaken during the very next semester that it is offered, provided that the student is enrolled in the doctoral program during that semester. These policies are firm, aside from extreme circumstances (e.g. Emergency Academic Regulations and Recommendations) for which the Institute requires accommodations.

Awarding a "J-" grade indicates that a student partially met expectations for satisfactory performance or progress in the subject, but expectations were not fully satisfied. As with other +/- modifiers, the minus is for internal advising purposes only. It will **not** appear on the student's official transcript and is **not** used in calculating their grade point average.

Receipt of a “J-“ grade will not automatically prompt any action by CGP’s subcommittee, the Graduate Academic Performance Group (GAPG). However, the subcommittee expects that the student, their advisor, and the academic program office will create a clear, actionable plan for improvement in the subject during the next term. It is important to implement this plan in the following semester, as a "J-" followed by a "U" in consecutive semesters can result in a departmental recommendation to transition from a doctoral to a master's degree program.

Unsatisfactory Progress

Students judged to be making unsatisfactory progress toward their degree objective will be so notified in writing by the research advisor(s), the Graduate Officer, or the Dean for Graduate Education. If sufficient improvement is not made by the end of the following semester, future registration may be denied.

Part VI: Doctoral Program Milestones

Biology Requirement

Each doctoral student is required to take at least one subject on the molecular and cellular basis of biological systems, which can be satisfied by one of three options: (a) taking MIT’s introductory undergraduate biology course (7.012/7.013/7.014), (b) taking MIT’s MOOC equivalent of 7.012, 7.00x Introduction to Biology as a verified student and pass the Competency Exam, or (c) petitioning to satisfy the requirement by virtue of having already taken an equivalent course(s) at their undergraduate institution prior to admission to MIT. If a student follows option (b) and does not pass the Competency Exam, the student must take 7.012/7.013/7.014 in-person. If a student follows option (c), he/she should provide detailed written information about the relationship of the material covered in the course(s) that he/she has taken and the material covered in 7.01X http://web.mit.edu/7.01x/. The syllabi of the courses and a copy of the undergraduate transcript should be included as documentation.

Students should request the Graduate Officer’s approval to satisfy the Biology Requirement as soon as possible after completing the Qualifying Examination. Students can request this approval by completing the Request for Biology Requirement Exemption Form online on ChemE Graduate Student Milestones (see page 46).

A grade of “B-” or higher must be received in any course listed to satisfy the Biology Requirement.

Minor Requirement

The Departmental Minor Requirement broadens the education of doctoral students by exposing them to modes of thinking or problem solving in another field.

For students in the traditional PhD/ScD program in Chemical Engineering, this is achieved via concentrated study of some other discipline or body of knowledge outside Chemical Engineering, consisting of at least three courses and 24 total credit units. The minor field may be technical (e.g.,

polymers, colloids, energy systems, biomaterials, applied physics, applied mathematics) or non-technical (e.g., energy policy, management, foreign languages), but must have a coherent theme. It is the responsibility of the graduate student to provide a clear written rationale for the selection of the three courses to demonstrate that they indeed represent a coherent theme. In this respect, the subjects for the minor should pass at least one of the following three tests of coherence:

1. They should be offered by the same department outside of Chemical Engineering.
2. Although perhaps not offered by the same department, they should be part of a conceivable major.
3. Research in the topics covered in the three courses could be published in the same specialty journal.

Criterion (2) applies primarily to disciplines that span multiple departments, such as biology, chemistry, and mathematics. Subjects with 10.xxx numbers can be used to fulfill the minor requirement as long as (a) the course content has minimal overlap with or is significantly more advanced than the Chemical Engineering Core Curriculum, and (b) at least one course used to fulfill the requirement is offered by an outside department. Exceptions to these guidelines may be made at the discretion of the Graduate Officer.

Courses selected to satisfy the minor requirement should be graduate-level courses which are offered for a letter grade. In cases where no graduate-level introductory course is available to build the intellectual foundation required to pursue the selected minor, and undergraduate-level course(s) are required to gain fundamental understanding of a subject, these may be approved at the discretion of the Graduate Officer. For example, if a graduate student proposes a minor in Statistical Mechanics without any previous background on the subject, then, it is acceptable for the student to first take an undergraduate-level course in Statistical Mechanics, and then to take two graduate-level courses on this subject. Another example involves a minor in foreign languages, where some of the courses offered in the chosen language are undergraduate-level courses, which are required to advance to the next level of difficulty. In all minor requests involving exceptions, it is the responsibility of the graduate student to present convincing arguments to justify their petition. To avoid potential misunderstandings, students should seek approval of their minor program from the Graduate Officer before taking any of the three proposed courses. Note that the Proposal for Doctoral Minor Form is available on online. Failure to follow this last guideline may result in rejection of the minor Petition. In all cases, the proposed minor program must be approved by the Graduate Officer before the Regular Thesis Committee Meeting. At that meeting, the student will be asked to briefly discuss their choice of minor, including documenting it in the Regular Thesis Committee Form. Approved minors can be revised at any time, subject to the approval of the Graduate Officer.

The sequence of subjects in the Sloan School taken by PhDCEP students satisfies the Departmental Minor Requirement, and no formal petition for approval is required. The five graduate-level subjects in Computational Science and Engineering are required to satisfy the Departmental Minor Requirement; no formal petition for approval is required. Students in the PPSM program must take three subjects in Chemical Engineering, in addition to those that are part of the PPSM core curriculum, in order to satisfy the Minor Requirement. Two of these three subjects must be from the Chemical Engineering Core Curriculum (10.34, 10.40, 10.50, and 10.65).

A grade of "B-" or higher must be received in every subject taken to satisfy the Minor Requirement.

Teaching Requirement

It is the Department's policy that every doctoral student is required to serve as a Teaching Fellow (TF) for one term. An exception is the PhDCEP program which does not require a student to serve as a TF or TA. Two possible semesters of availability for the TF draft are identified by the student at the time of the Thesis Proposal Presentation Meeting, by completing the appropriate section in the online Report of Thesis Proposal Presentation Meeting Form. Students must complete this section of the form, and should discuss their semesters of availability with their research advisors prior to filling out the form. Students should complete their TF service to the Department by the end of their fourth year. During the semester of instruction, TFs must register for 20 units of 10.TAC (P/D/F).

Doctoral Student Seminar (PhD/ScD and PhDCEP Programs)

Two subjects (10.991–fall semester and 10.992–spring semester) have been designated as doctoral student seminars. All students in the PhD/ScD and the PhDCEP programs must register for these subjects after their first fall semester at MIT. Students planning to defend their thesis in a specific semester should not register for 10.991 or 10.992 in that semester. The doctoral seminars are held on Monday afternoons from 3:00 to 4:30 p.m. (in room 66-110). Typically, three third-year doctoral students will deliver presentations on their research.

All doctoral students are also expected to regularly attend the Friday afternoon Departmental seminars (3:00 to 4:00 p.m. in room 66-110) delivered by visitors to the Department. Both sets of seminars provide an excellent opportunity for students to broaden their perspective in many areas of Chemical Engineering research.

The purpose of the third-year talk is manifold. For the attending students, it provides an opportunity to (1) keep aware of the scope of active research in the department, (2) practice critically evaluating and giving constructive feedback to speakers via the evaluation forms, and (3) gain confidence asking questions in a public, but supportive, forum. As such, attendees are strongly encouraged to listen carefully, give useful feedback, and participate during the question and answer session. The feedback will be provided to the speaker anonymously. It will not be shared with the faculty, nor will it influence the speaker's satisfactory completion of the requirement. Attendees are encouraged to be constructive, honest, and thoughtful. For the presenter, it provides an opportunity to prepare and deliver a more general talk than a typical talk at a group meeting or even conference talk; each attending student should be able to follow the content of the talk and learn from it. Thus, the goal of the seminar is not to impress the audience with the magnitude of the presenter's results, but instead to focus on creating a clear, concise message with a unifying theme and sufficient context and motivation.

Attendance is taken at the Monday seminars (via online seminar evaluation forms). Attendance is based on the number of individual presentations attended. <u>Students who do not attend at</u>

least 50% of the total seminar presentations will receive an "F". Attendance credit will not be given for a student's own presentation, or for the mandatory safety seminar. ChemE-CSE PhD students are required to attend and complete the mandatory 50% attendance.
PPSM students are exempt from 10.991/10.992. For PPSM students, 10.960 satisfies the seminar requirement in the Fall and Spring semesters.

The Academic Office is responsible for scheduling the student seminars. All doctoral students are required to deliver a Departmental seminar. Students should plan to deliver their doctoral seminar in their third year. Students who attend the Practice School or who repeat a core subject will be given an extra semester to prepare for their seminar. PhDCEP seminar speakers should plan to give their presentation in the spring term of their third year at MIT. At that time, they should be close to completing the research phase of the PhDCEP program, and therefore, the seminar will be a good way for the PhDCEP students to demonstrate the achievement of at least one publishable paper from their period of research in the department.

Seminar speakers must prepare a summary of their talk one week prior to the seminar. A copy of this summary (1 to 2 pages), should be emailed (in PDF format) to the Academic Office one week before the presentation. The Academic Office will email the summaries to everyone in the department prior to the Monday seminar. Seminar speakers should plan to speak for no more than 20 minutes to allow sufficient time (10 minutes) for questions.

Qualifying Examination

The purpose of the Chemical Engineering Qualifying Examination is to assess whether the student possesses the necessary attributes to succeed at the doctoral level of study. These attributes include technical mastery of the various components of the chemical engineering discipline, the ability to integrate material across subject boundaries, and creative problem solving when confronted with unfamiliar scenarios. The Chemical Engineering qualifying examination at MIT consists of both written and oral components.

The *Written Qualifying Examination* is also called the written portion of the **Thesis Proposal**. The result of the Written Qualifying Exam, evaluated with a pass or fail grade by the student's thesis committee, is considered alongside the student's performance in core and elective subjects.

Although the format of each Thesis Proposal is a matter to be worked out between the student and their research advisor(s), the outline below may serve as a useful guide:

1. **Cover Page**
   - Provides a title, name(s) of research advisor(s) and members of the Thesis Committee, and date of submission. The mailing addresses, email addresses, and telephone numbers of members of the Thesis Committee outside the Department should also be provided.
2. **Specific Aims**
   - Clearly states the thesis objectives (not to exceed one page).
3. **Background**

- Presents a rationale for conducting the proposed research studies.
- Reviews briefly the previous research relevant to the proposed studies.

4. **Research Plan**
   - Discusses the planned research with particular emphasis on expected difficulties and challenges.
   - Presents preliminary results.
   - Indicates how the proposed experimental and/or theoretical results will serve to meet the proposed objectives.
5. **Safety**
   - Discusses any safety-related issues including personal and environmental safety, and waste-disposal procedures.
6. **Time Schedule**
   - Delineates the expected time schedule.
7. **Literature Citations**

The written Thesis Proposal, including figures, and tables, may not exceed 15 pages, using at least an 11-point font and one-inch margins, single spaced, not including references. The written Thesis Proposal is a statement of the intended plans for the research program, and is not meant to be a document containing a significant volume of research already completed by the student. At the completion of the meeting, it is the responsibility of the student to submit an online Report of Thesis Proposal Presentation Form. Once submitted, this form is electronically sent to the Research Advisor(s) first, and to the Thesis Committee second, for approval.

The *Oral Qualifying Examination*, also called the oral portion of the **Thesis Proposal**, is a requirement that is met by the satisfactory presentation of the thesis proposal at the first meeting of the candidate's Thesis Committee. The candidate should be able to demonstrate familiarity with the relevant background, explain the motivation and specific aims of the project, and defend the proposed research plan.

The student should also demonstrate professionalism in preparing and presenting the proposal. A typical thesis proposal presentation should be no more than 45 minutes long, with an additional 45 min for discussion, questions, and deliberation of the Thesis Committee. If the student's performance is unsatisfactory in the judgment of the MIT faculty serving on the Thesis Committee, the student will be so informed. Students who fail the oral exam may request to revise and present the proposal for at most a second time. Such a repetition of the thesis proposal presentation must be completed by the end of the next regular term (Fall or Spring). Again, in no case is a candidate allowed to retake the oral exam more than once.

For PPSM students, the Department allows the PPSM Qualifying Examination to be administered in lieu of the Chemical Engineering Qualifying Examination.

ChemE-CSE PhD students take the Chemical Engineering Qualifying Examination.

Student will be informed of their passing or failing grade by the thesis committee after the Oral

Presentation. In the case of failure, the student's thesis committee will decide on any needed remedies. A student may only revise the written Thesis Proposal/Written Qualifier for re-grading once. Candidates who have passed the core subjects must complete the written and oral components of the Thesis proposal (the Written and Oral Qualifier) before the end of the third semester of their MIT enrollment, except for those attending the Practice School during this time, in which case the deadline is the end of the fourth semester.

Students who have passed the Qualifying Examination may petition to defer the start of their research and temporarily withdraw from MIT. All temporary leaves must be approved by the Department through the Graduate Officer. When a petition is approved, a letter recognizing this approval, signed by the Graduate Officer, is given to the student. The letter states that the student will be readmitted to the Department, and will not be required to retake the Qualifying Examination, if they return to the Department within five years of passing the Qualifying Examination. A copy of this letter is kept in the graduate student file in the Academic Office for future reference.

Failure to submit the written Thesis Proposal document and deliver the oral presentation within the aforementioned deadlines will constitute unsatisfactory progress toward the doctoral degree, and can result in denial of future registration. There is also a financial penalty for failure to complete the Thesis Proposal Requirement before the stated deadlines.

Scheduling of meetings with faculty can be challenging at certain times during the academic year. It is strongly recommended that students do not leave the completion of the Written Qualifier and Oral Presentation of the Thesis Proposal to the very end of the allotted time frame discussed above. It is the student's responsibility to schedule a room and any audio/visual equipment that they may need for their oral presentation (see page 33). Reserving the room and submitting the various Thesis Committee Reporting Forms are also the student's responsibility for all subsequent Thesis Committee Meetings following the Oral Presentation of the Thesis Proposal. Copies of the written Thesis Proposal document should be emailed to each member of the student's Thesis Committee and to the Academic Office at least three weeks before the oral Thesis Proposal presentation.

Thesis Committee

As soon as practical, but no later than eleven months after choosing a research advisor(s), each doctoral student should select a Thesis Committee in consultation with their research advisor(s). The Thesis Committee must contain:

- Research advisor
    - The research advisor will serve as the Thesis Committee Chairperson.
    - For students in the PPSM program, the research advisor need not be a PPSM faculty or affiliate, but it is not recommended if the thesis work is in an area unrelated to polymer and soft matter.
- Two or more members in addition to the research advisor(s).

- At least two members of the Thesis Committee must be faculty members in Chemical Engineering.
- At least one committee member must be a Chemical Engineering faculty member who is not the research advisor.
- For students in the ChemE-CSE PhD program, the Thesis Committee should consist of two or more members, in addition to the research advisor. At least one of these must be a faculty member in Chemical Engineering. Additionally, one of the two following conditions must be met: *either* a CCSE PI must serve as the Thesis Committee Chairperson & Research Advisor, *or* two CCSE PIs must serve as members of the Thesis Committee (if the research advisor is not a CCSE member).

The Thesis Committee is responsible for providing advice on the doctoral student's academic and research programs, and for monitoring the quality and the progress of the research carried out by the student. A Thesis Proposal is to be presented to the Thesis Committee by the doctoral student. Oral and written progress reports are to be presented at least once a year in the PhD/ScD program, and more frequently in the PhDCEP. It is the responsibility of the student to ensure that meetings with the Thesis Committee are scheduled in a timely manner. It is also the responsibility of the student to reserve a room for the Thesis Committee meetings (see page 33). Reporting Forms for the Thesis Proposal Presentation as well as for the Thesis Committee Progress Reports are online, electronic forms (ChemE Grad Student Milestones).

Doctoral students are encouraged to have frequent one-on-one interactions with Thesis Committee members. In addition, doctoral students are encouraged to add new members to their Thesis Committee as needed during the course of their thesis project. When there is mutual agreement between the doctoral student and a Thesis Committee member that continued service on the Thesis Committee is not warranted, a member of the Thesis Committee may be excused. However, the requirements on the composition of the Thesis Committee, as indicated above, must be satisfied at all times.

Report of Regular Thesis Committee Meeting,
Report of Plan-to-Finish Thesis Committee Meeting,
and Report of Final Thesis Committee Meeting

In the PhD/ScD program, Written and Oral Progress Reports should be presented to the Thesis Committee at least once every 12 months. The PhDCEP program requires one Thesis Committee Meeting each in both the fall and spring semesters of the second and the third years of the program. These committee meetings should not be scheduled in December or in May, because of the large numbers of proposal presentations and final defenses that occur in those months. In addition, for both doctoral programs, frequent one-on-one interactions with the student's Thesis Committee members are expected and encouraged.

For a Written Progress Report to be most useful, it should clearly state the problems and challenges encountered by the student in their research, including unsuccessful attempts made to resolve them and a discussion of future approaches to be pursued. The report should discuss any

safety-related issues including personal and environment safety, and waste-disposal procedures. The Written Progress Report should be as concise as possible. Students are also encouraged to append copies of the slides to be used during the oral presentation at the Thesis Committee Meeting. When appropriate, supporting data and completed manuscripts may also be appended to the Written Progress Report.

Written Progress Reports, including all appended materials, should be emailed to each Thesis Committee member at least one week prior to the Thesis Committee Meeting, to enable each Thesis Committee member to be better prepared for the meeting.

The Thesis Committee Meetings should not exceed 90 minutes, with about half of it devoted to the student's presentation and the remaining time to discussions. When applicable, the student should discuss safety issues related to the experimental research pursued. Career and professional goals should also be discussed at the end of the research presentation. This discussion should typically include the career plans of the student, as well as fellowships, classes, and training that the student intends to pursue. Following the Thesis Committee Meeting, in consultation with the research advisor(s), the student should prepare a detailed summary of the Thesis Committee's evaluation of their research to date, as well as indicate any real or potential problems identified. The form also includes comments pertaining to professional development which must also be completed. The student should submit the Written Progress Report online within one week following the Thesis Committee Meeting. The online form will then be sent electronically to the research advisor(s), and to each Thesis Committee member for approval. The student, the research advisor(s), and other members of the Thesis Committee, will receive a copy of this form, including a meeting summary and notes, for future reference via email. An electronic copy of the form and supporting materials will also be kept in the graduate student's file in the Academic Office for future reference.

Regular Thesis Committee Meeting

The first thesis committee meeting following the Thesis Proposal Presentation, referred to as a Regular Thesis Committee Meeting, should be scheduled by the student within 12 months of the Thesis Proposal Presentation Meeting. A second Regular Thesis Committee Meeting, to be held within 12 months of the first, may be needed before the Plan-to-Finish Thesis Committee meeting.

Plan-to-Finish Thesis Committee Meeting

The Plan-to-Finish Thesis Committee Meeting should be scheduled by the student when completion of the research is anticipated within about 12 months. At the Plan-to-Finish Thesis Committee Meeting, the Thesis Committee should evaluate a Written Plan-to-Finish Report prepared by the student. This report should be a concise summary reevaluating the research plan proposed by the student in the original Thesis Proposal, including discussing and justifying any needed modifications to the original research plan. The report should also discuss the remaining tasks (experiments, theoretical derivations, simulations, analysis, literature review, and writing) needed to bring the doctoral thesis project to a successful completion. A realistic time line for the completion of these tasks should also be included. The written Plan-to-Finish Report should not

constrain the intellectual inquiry of students and research advisor(s). On the contrary, it is subject to revision if significant opportunities or setbacks arise in the course of the remaining thesis research. The Written Plan-to-Finish Report should be emailed to each Thesis Committee member at least 1 week prior to the meeting.

Final Thesis Committee Meeting

Within 12 months of the Plan-to-Finish Thesis Committee Meeting, the student should schedule the Final Thesis Committee Meeting. For this meeting, the student should prepare a Written Final Progress Report, summarizing the main results obtained in the doctoral research, and justifying why these results are sufficient for completion of the doctoral thesis. This document should be emailed to each Thesis Committee member at least one week prior to the meeting. At the Final Thesis Committee Meeting, the Thesis Committee should agree that the work carried out by the student, as reflected in the Written Final Progress Report and in the student's Oral Presentation, constitutes a high-quality research study and is suitable for presentation to the faculty in the Final Thesis Defense. In the semester during which students plan to defend their thesis, they should only register for 10.THG.

The timeline between meetings (12 months) can be shortened if warranted.

For those students who have not had a Thesis Committee Meeting in 12 months, a form recording the date of the last Thesis Committee Meeting (see page 48) will be emailed to them. This Form will indicate that the student should have a Thesis Committee Meeting within three months following Registration Day. The Form should be signed by the student and by the research advisor(s) to indicate that this important requirement is clearly understood. The completed form should then be submitted to the Graduate Officer for approval as part of the Registration Process. The form, approved by the Graduate Officer, will be kept in the graduate student file in the Academic Office for future reference.

In the PhDCEP program, the Thesis Committee evaluates the merits of the research on an ongoing basis, similar to the PhD/ScD program. In addition, there is special significance to the PhDCEP Plan-to-Finish Meeting, which is held prior to the end of the Fall semester of year 3 of the program. Based on the written Plan-to-Finish Report and the discussions at the Plan-to-Finish Meeting, one of four outcomes is possible:

(a) Progress is satisfactory, and the student is on track for successful completion of the research project prior to the end of the third calendar year.
(b) The research progress of the student is satisfactory, and the scope of the project is well suited for completion in the foreseeable future, but not by the end of the third calendar year.
(c) The student's progress is satisfactory, but the scope of the research project is not well suited for completion in a clearly defined time frame. The larger scope of the research subject relative to that originally envisioned makes it more suitable for the PhD/ScD program that has no specific time limit on the research phase.

(d) The research progress is unsatisfactory, and its successful completion by the student is not expected on any time scale.

Outcome (a) is most likely. In Outcome (b), the Thesis Committee and the research advisor(s) are empowered to recommend to the Chemical Engineering Department Graduate Officer a time extension of up to one year; approval is expected under normal circumstances. Outcome (c) requires decisions on the part of the student. If the student wishes to enter the PhD/ScD program in the Chemical Engineering Department, a formal application to the Department's Graduate Admissions Committee will be required. This application would normally be submitted by the end of IAP of the academic year in progress. Endorsement of the student's research work and a petition by the research advisor(s) and the Thesis Committee will be essential in such cases. The Department anticipates that outcome (d) will be a rare event. Students viewed by the Thesis Committee as making unsatisfactory progress with no likely improvement will be denied further registration and will leave MIT with the MSCEP degree.

Final Thesis Defense

Following the satisfactory completion of the Final Thesis Committee Meeting, doctoral students can begin the Thesis Defense process. The best source of information about this process is the "Thesis Packet for Doctoral Candidates", which is located online on the Departmental website at https://cheme.mit.edu/resources/student-resources/. This packet describes in detail the procedures for preparing for a Thesis Defense and submitting a Doctoral Thesis (note that the procedures for preparing and submitting a Master Thesis are the same).

The sequence of steps for the Doctoral Thesis Defense are as follows:

1. Beginning of the Term: Application for Advanced Degree: An application for Advanced Degree must be filled out online via WebSIS http://student.mit.edu/ by the date indicated on the MIT Academic Calendar http://web.mit.edu/registrar/calendar/, depending on which term (Fall, Spring, IAP, or Summer) the student plans to defend.

2. At least Four Weeks Prior to Defense: Thesis Defense Scheduling Approval: The student must submit the Thesis Defense Scheduling Form online on ChemE Grad Student Milestones. The Thesis Defense Scheduling Form is used to communicate approval to the Academic Office and inform the Academic Office of the proposed date and time of the defense. The student should work with their thesis committee members to find and secure a suitable date and time for their thesis defense, so that as many members of the committee are present. All Thesis Committee Members should be present at the defense, and every effort should be made to choose a date that makes this possible. Although the date should be arrived at via committee consensus, this form only requires the approval of the research advisor(s).

3. Four Weeks Prior to Defense: Submit Thesis Review Form: After the Thesis Defense Scheduling Form has been approved, and four weeks prior to defense, the student must

submit the Thesis Review Form online on ChemE Grad Student Milestones. If the committee does not submit their approval via this form, the student must reschedule their thesis defense date. Upon submission, this form will be sent to the research advisor(s) and every committee member. The thesis committee members will have two weeks to review, comment upon, and possibly suggest changes to the thesis document.

4. After Date is Approved: Reserve a Room: As soon as the date and time are confirmed via the Thesis Defense Scheduling Form, the student should reserve a room for a two-hour period (see page 33).

5. Two Weeks Prior to Defense: Thesis Review Form Approval Due: Exactly two weeks prior the defense date, approval of the thesis and approval to defend are required from each committee member, via the Thesis Review Form. It is the responsibility of the student to monitor the program of this form and remind their committee members of the deadline of this form, to ensure its timely submission.

6. Two Weeks Prior to Defense: Submit Technical Summary & Details of Defense to Student Office: The Student should email a PDF of their Technical Summary to the Academic Office. The technical Summary is a text-only document no longer than two-pages (12-point font, 1-inch margins, single-spaced) that should describe the scope and the significance of the entire doctoral thesis. The primary audience is the Chemical Engineering Department faculty, who will be interested in a concise description of the thesis research and its most significant findings. Upon receipt of the technical summary, the Academic Office will distribute it to the department via an email announcement designed to generate attendance at the Final Thesis Defense. All thesis committee members are expected to be present.

   Furthermore, students should also send the following information to the Academic office: the date and time of the thesis defense, the presider of the thesis defense (see below), the room number of the thesis defense (if in person or hybrid). The Student is responsible for scheduling the zoom meeting if they plan on defending virtually or hybrid. Nevertheless, please inform the Academic Office whether you plan on defending in person, virtually, or hybrid.

7. Within Two Weeks of Defense: Secure Faculty Presider: The thesis defense must be presided over by a faculty member who is a member of the Chemical Engineering Department but not the research advisor to the student. The majority of the time this falls to the ChemE, non-advisor faculty member who is a member of the thesis committee. It is the responsibility of the student, with the help of the research advisor if needed, to secure a presider for the defense in advance of the thesis defense, to ensure this requirement is met. The student must email the name of the presider to the Academic Office.

8. Day of the Defense: The Thesis Defense: The Student should plan to speak for no more than 30-40 minutes. The thesis presider from the MIT Chemical Engineering faculty will introduce the research advisor (s), who subsequently will introduce the candidate. The thesis presider will also be in charge of the open and close question-and-answer sessions, which follow the candidate's presentation, culminating in the final deliberations by the faculty. The thesis presentation and first questions-and-answer session are open to the public but will be followed by a second session involving only the candidate, Thesis Committee Members, and other MIT faculty.

9. Two Days After the Defense: Turn in Forms to Academic Office: Once the thesis defense is successfully completed, the student has two days to assemble their three thesis documents. The student should email the three thesis PDF documents, (1) a separate title page signed by the student and the student's advisor with the correct conferral date, (2) the student's thesis, with an unsigned title page, (3) a signed departure form, to the Academic Office. Then, the Final thesis will then be distributed* to the MIT Archives and the Engineering Library.

   * In the case of PhDCEP candidates, the final thesis will not be distributed for approval and signature until the end of the final year of the program, so that the 10.IGP Integrative Complete Project Paper can be included as a capstone chapter in the thesis document.

The Student will need to email the following documentation in PDF format to the Academic Office, (found within the Thesis Packet for Doctoral Candidates, located on the departmental website at: https://cheme.mit.edu/resources/student-resources/). Furthermore, the three thesis documents must be named according to the following scheme: authorLastName-kerb-degree-dept-year-type_other.ext.

Example:
- Departure Form PDF: sweeney-vsweeney-phd-cheme-2024-departureform.pdf
- Signature Page PDF: sweeney-vsweeney-phd-cheme-2024-sig.pdf
- Thesis PDF: sweeney-vsweeney-phd-cheme-2024-thesis.pdf

- Submit Forwarding Address and Recruiting Questionnaire on ChemE Graduate Student Milestones.

Scheduling of Thesis Defense

The official deadlines that apply to Chemical Engineering students in the PhD/ScD program for each of the three Institute-wide degree lists compiled during the year are set by the Registrar's Office, and are published in the Institute calendar each year (https://registrar.mit.edu/calendar). In certain cases, the Academic Office may be able to grant extensions beyond these official dates, but such extensions cannot be guaranteed. Students who miss the official Institute deadlines may be required to register for the next semester in order to defend their thesis. Some tuition costs may be incurred as a result.

For students in the PhDCEP program whose Sloan School component will begin in the fall semester, the complete research component of the thesis must be turned in to the Academic Office and distributed to all the thesis committee members by August 15. The two-week reading period, therefore, must be completed by September 1, and the student and the Thesis Committee members must schedule the date of the thesis defense before September 15. The Sloan School component of the PhDCEP program will begin that semester, concurrent with the Thesis Defense in Chemical Engineering.

Completion Of Studies

Each student, upon completion of their graduate program, must submit the following two forms:

1. Forwarding Address and Recruiting Questionnaire (Online).
2. Chemical Engineering Department Departure Form:
    - This form requires various approvals, including those of the student's research advisor(s) and either the Facilities Manager, Chris Monaco (room 66-371, (617)715-2995, monacoc@mit.edu), or the Dept. EHS Coordinator, Brian Smith (room 66-471, (617)253-6238, bssmith@mit.edu) to ensure that the laboratory and/or office space is neat and clean, and that no unapproved chemical samples are left behind. In addition, all office, desk, and lab keys must be returned to the Administrative Assistant associated with the student's research advisor), prior to leaving the Institute.

As detailed above, under Final Thesis Defense, each student submitting a thesis for the master's or doctoral degree must turn in the following PDF documents in the correct naming procedure to the Academic Office:

1. Thesis with an unsigned title page
2. Title page with the student's and student's advisor's signature
3. Departure Form with appropriate signatures

The thesis <u>must be signed</u> by the student, and their research advisor(s), prior to being submitted to the Academic Office. The title pages and one copy of the thesis will then be delivered by the Academic Office to the Graduate Officer for final approval and signature. The PDF documents of the doctoral thesis, along with all other forms, must be turned in to the Academic Office within two days following the Final Thesis Defense. The master's thesis (with the accompanying forms) must be turned in to the Academic Office on or before the last day of classes.

<u>Part VII: Finances and Funding</u>

Graduate students receive financial assistance in the form of fellowships, research assistantships, or teaching assistantships.

Fellowships

Fellowship funds come from two general sources — outside or inside the Institute. Examples of outside fellowships include: NSF, DOE, Hertz, NIH, EPA, and GEM Fellowships. The MIT Office of

the Dean for Graduate Education (room 3-138) has a more complete listing of fellowship information. Fellowships from MIT funds are typically limited to first-year graduate students. Funds for such awards are usually provided from gifts from alumni, from unrestricted industrial grants, or from the Provost's Office in the form of Presidential Fellowships. For more information, please visit the Financial Aid Office website https://sfs.mit.edu/graduate-students/.

Graduate students supported with a departmental fellowship have no limitations with regard to credit units that they may take. As a guideline, however, a full course load is considered to be 36 credit units each semester.

Recipients of outside fellowships should check with the coordinating official in the MIT Office of Graduate Education to determine any obligations regarding their fellowships.

The recipient of a fellowship is allowed two weeks of vacation per calendar year (excluding Institute holidays). Vacation schedules must be approved by the research advisor(s). Additional vacation time is allowed only with the permission of the research advisor(s).

Research Assistants

Research Assistants (RAs) are supported from research contracts or grants, and are supervised by research advisor(s) who have a responsibility to the funding organization to conduct research in specified areas.

In most cases, an appointment as a RA coincides with the selection of a research topic and research advisor(s). In other words, the student declares that their thesis will be conducted in the area specified in the research project's grant (contract). Such RAs may register for no more than 36 credit units, including thesis, each semester (note that registration in research seminars in the 10.9XX series is not included in this total).

In a few cases, students may be assigned as RAs to a project where there is an agreement between the student and the research advisor(s) that the work will not be used as part of the thesis. The 36-credit unit maximum noted previously is still in effect. However, no academic credit is given for the RA appointment in that case. A typical time commitment to this type of research project would be 20 hours per week.

PhDCEP students are not allowed to serve as RAs, or to be funded via an RA, during their time at Sloan.

RAs are allowed two weeks of vacation per calendar year (excluding Institute holidays). Vacation schedules must be approved by the research advisor(s). Additional vacation time is allowed only with the permission of the research advisor(s).

Teaching Fellows/Assistants/Graduate Instructors

Teaching Fellows (TFs) play a central role in the Department's educational program. Service as a TF, working closely with one or more faculty members in the Department, is an important and beneficial aspect of the graduate school experience. Each TF is assigned to a specific undergraduate or graduate subject. TF duties include (a more detailed list of TF duties will be provided at the beginning of the semester by the faculty member(s) teaching the class):

- Developing and grading homework and exam problems.
- Grading laboratory reports.
- Holding regular office hours for individual students as well as for group-help sessions.
- Planning, designing, and supervising laboratory experiments.
- Proctoring exams.
- Maintaining a subject website.
- Preparing electronic versions of the course materials for the Student Office.

Some opportunities exist for students interested in gaining teaching experience to serve as a Graduate Instructor, otherwise known as an "Instructor G" (IG). Interested students should first contact the faculty member teaching the class to determine if there is a possibility to serve as an IG. The faculty member should then contact the Executive Officer to discuss the appointment. Typically, students who can expect to compete successfully for an appointment as an Instructor G should have had exceptional performance in prior service as a TF/TA, and should have interest in an academic career.

TF assignments are made at least one month before the beginning of the fall and spring semesters. In some cases, enrollment-driven, last-minute TF assignments or adjustments are necessary. All doctoral students are expected to select two future semesters to TF at the time of the presentation of their Thesis Proposal (see page 20). Two different semesters of availability for the TF pool are selected by the student at that time. The department then chooses one of these two semesters for the TF service. It is the responsibility of the student to coordinate the selection of the two semesters with their research advisor(s). The early identification of possible periods of TF service allows for effective planning by students and research advisors of activities related to the thesis project. Students should complete their TF service before the end of their fourth year.

At the conclusion of the TF assignment, a meeting should take place between the TF and the course instructor(s) to evaluate the TF's performance in the course. A Departmental TF Evaluation Form (https://cheme-resources.mit.edu/milestones) should be completed and submitted online by the course instructor(s) and by the TF at the time of the meeting. Only one instructor needs to complete the evaluation form. Further, at the conclusion of the TF assignment, the TF must submit an electronic copy of all course documents to the Academic Office. The Academic Office stores these course documents for the future use of Course Instructors and TFs. These materials should be submitted via Dropbox, Google Folder, or another file-sharing protocol.

TFs are expected to be available from September 1 to January 15 (Fall semester) or from January 16 to May 31 (Spring semester). Some courses may require students to start a few

weeks before the normal TF start date. In such cases, the TF will be hired as an hourly employee until the start of the appointment. A student working as a full TF is expected to devote an average of 20 hours per week to TF responsibilities, which corresponds to a total of 389 hours. The number of subject credit units for which a TF may enroll is limited to 36 credit units per semester, in addition to research seminars in the 10.9XX series. TFs must register for 20 units of 10.TAC (P/D/F) during the semester of instruction to earn academic credit toward your degree.

MSCEP and PhDCEP students do not have a teaching requirement and are hired as Teaching Assistants (TAs). TAs are subject to the rules and regulations in the Collective Bargaining Agreement. TAs must also pay dues to the union.

TA/TF Assignment Process

The Academic Office collects TA/TF assignment preferences from all students in the TA/TF pool as well as any other volunteers (including PhDCEP students currently at Sloan). A survey is sent mid-semester to collect preferences for the next assignments (i.e. mid-October survey for Spring assignments or mid-June for Fall assignments). The preference survey allows students to pick their top four (4) choices as well as one course they do not want to teach. Additional information is collected on wet lab experience and core course preferences. Please consider scheduling conflicts when submitting preferences. Any students in the TA/TF pool who do not submit preferences are treated as floaters and assigned based on the needs of the department. Faculty and instructor requests are considered in the TF assignment process but do not supercede student preferences.

During the assignment process, the Academic Office will reach out to any students who may be assigned outside their top preferences and the options will be discussed prior to assignment. Once assignments are announced, there may be late minute changes based on registration and course availability. For concerns regarding the assignment process, students should reach out to the Assistant Director of Academic Programs.

Practice School Stations

Financial support is provided during the semester that students are engaged in project work at the Practice School stations.

Graders

Graders assist in the teaching of many subjects. These positions are advertised to the student body at the beginning of each semester. Students volunteer for these positions, and must be serving as a full-time RA or Fellow during the term of service as a grader. Graders are involved in grading homework assignments, copying material for class, and preparing project materials. Graders should not be responsible for any activity involving student contact. Graders are paid $18.50/hour and can work no more than 10 hours per week. International students must confirm their funding source to determine eligibility.

Tuition Charges for Doctoral Theses

Tuition charges for continuing resident student registration will be in accordance with the regular tuition and minimum fee schedule as indicated in the MIT Catalogue or on the website https://registrar.mit.edu/registration-academics/tuition-fees/graduate.

If students defend their doctoral thesis before the last day of classes, the tuition will be prorated according to the Registrar's Tuition Table to the day of the oral thesis defense. Students should consult the MIT Academic Calendar for the various deadlines for doctoral theses submission https://registrar.mit.edu/calendar.

Consultation Or Outside Jobs

The financial aid provided to the Department for fellowships, research, or teaching assistantships usually carries a restriction that the student should devote full-time effort to the activities for which they is receiving support. Students receiving support from the Department must therefore consult with their research advisor(s) and ask the Chemical Engineering Graduate Officer before undertaking any compensated outside activity, and obtain an approval form from the Dean for Graduate Education. Uncompensated outside activities that relate to thesis research should also be discussed with the thesis advisor and Graduate Officer to ensure compliance with MIT's conflict of commitment policies.

Part VIII: General Information

Office Space and Card Access

First-year graduate students will receive their office assignments from the Academic Office during the first few days of the fall semester. Access to the first year offices is gained by tapping your student ID on the keycard proximity reader directly next to the door. Each first year student is assigned a locker in their first year office and each locker has a specified number. The number of the locker also correlates to the number textbook you will receive for your core classes, this will help the Academic Office keep track of which students are responsible for each textbook. Students may not switch, trade, or use another person's locker, textbook, or anything else that is assigned specifically to a student.

Furthermore, there are two 1st year offices. There is a blue room (66-244) and a orange room (66-252). The blue room is a quiet room, reserved for work and studying for students who prefer a lower decibel setting. The orange room alternatively is a loud room for students who prefer to work in an environment that allows for higher decibel levels. Although a student's locker will reside in either the blue or orange room, that particular student is not forced to use that room as their designated study space, and is in fact encouraged to use whichever room is more conducive to their work and study habits.

When a student chooses a research advisor, they move into a laboratory or office space associated with the advisor's research group. The student should contact the Research Advisor's Administrative Assistant to secure an office key or card access as applicable.

When graduate students vacate their offices, their desks and office spaces must be emptied. Any office or desk keys should be returned to the Research Advisor's Administrative Assistant.

Room Reservations

To make a room reservation in Buildings 66, E17 (5th floor), E18 (5th floor), and E19 (5th floor), graduate students should request the assistance of the administrative assistant of their research advisors. For reservations in Building 76, email Mariann Murray at mariann@mit.edu.

Department Computer Support

The Chemical Engineering Computer Support Team is available for assistance with a wide range of computing-related issues, including computer viruses, email problems, network access, printing, software applications, web browser issues, system purchasing support, and obtaining a new IP address for a computer or printer. The support team is located in rooms 56-483 and 56-431 and can be reached by phone at extension 3-0088 or by email at cheme-computer@mit.edu.

Machine Shop Facilities

A Central Machine Shop facility is available on a fee-for-service basis. Requests for shop services can be made either in person or from the webpage http://web.mit.edu/cmshop. Emails can be sent directly to the Central Machine Shop at cmshop@mit.edu.

Laboratory Safety

Laboratory safety is of the utmost importance. Specific information on safety-related policies and procedures is available from the Departmental Safety Committee, chaired by the Department EHS Coordinator Brian Smith (room 66-450, (617)253-6238, bssmith@mit.edu). Another departmental resource person for general safety-related matters and general issues regarding departmental space and facilities is Chris Monaco (room 66-450, (617)715-2995, monacoc@mit.edu). Chris acts as the EHS coordinator for the department when Brian Smith is away from MIT. Ryan Samz (room N52-467, (617) 253-0347, rsamz@mit.edu), our Environment, Health, and Safety Office (EHS) lead contact, is another valuable resource for safety-related matters. Melanie Marketon (room N52-461, (617) 258-5644, marketon@mit.edu is a valuable resource at the EHS Office for biological safety issues. Ryan Samz (room N52-468, (617) 258-0347, rsamz@mit.edu), the EHS Radiation Protection Officer, is the person to contact for questions on radiation and lasers. Comprehensive safety information is available on the web from the MIT EHS office (http://ehs.mit.edu/site/).

Policies and procedures that describe each person's responsibilities for safe laboratory practices are detailed in the Chemical Engineering Department's "Chemical Hygiene Plan" (https://cheme.mit.edu/safety/). Although the research and other work activities conducted in the Department are diverse, three requirements apply in all cases:

1. We are all responsible for our own safety, as well as for the safety of individuals who work with, and for, us.
2. An individual running an experiment or utilizing the laboratory space at any given time, is responsible for the safe conduct of the experiment, and for the safe utilization of the laboratory space.
3. The supervisor of an individual running an experiment should be satisfied that the individual performing the experiment is aware of, and follows, safe laboratory procedures.

Anyone planning to work in a laboratory must log into the EHS website (http://ehs.mit.edu/site/training) to take the Training Needs Assessment, and to complete the training required before starting work in a laboratory.

Eye protection is required when working in all Chemical Engineering laboratories at all times. For many laboratory experiments, safety glasses with side shields are appropriate. If you require prescription eyewear and wish to obtain a free pair of prescription eyeglasses with side shields, please contact Sandra Lopes in Headquarters (66-350, slopes@mit.edu).

The MIT EHS policy mandates the use of lab coats in laboratory environments "at a minimum, a laboratory coat or equivalent protective clothing is required for work with hazardous chemicals, unsealed radioactive materials, and biological agents at BL2 or greater." However, wearing a coat is only the first issue; the second is choosing the right coat. It is important to choose a coat with features that are appropriate for the type of experiments that are being conducted in the laboratory. For help assisting in lab coat selection based off hazard please reach out EHS coordinator Brian Smith.

For a more detail on Laboratory safety and policies please reference the Chemical Hygiene Plan here https://cheme.mit.edu/safety/

Part IX: MIT Policies

Nonresident Doctoral Thesis Registration - Institute Regulations

Thesis research is ordinarily done in residence at the Institute. However, on some occasions, it may be essential or desirable that the student be absent from the campus during a portion of thesis research or writing. Nonresident doctoral thesis research status allows thesis research to be carried out while not in formal residence at the Institute.

For more information regarding eligibility, terms of status, approval process, duration of nonresident status, or special conditions, please visit the OGE website: http://oge.mit.edu/gpp/degrees/thesis/nonres/

Equal Opportunity in Education and Employment

The Massachusetts Institute of Technology is committed to the principle of equal opportunity in education and employment. More information on MIT's nondiscrimination policy can be found

at Policies & Procedures Section 9.3. See also Section 9.7 for the Institute's policy against retaliation.

The Vice President for Human Resources is designated as the Institute's Equal Opportunity Officer. Inquiries concerning the Institute's policies, compliance with applicable laws, statutes, and regulations, and complaints may be directed to Ramona Allen, Vice President for Human Resources, Building NE49-5000, 617-324-5675. In addition, inquiries about Title IX (which prohibits discrimination on the basis of sex) may be directed to the Institute's Title IX coordinator, Sarah Rankin, Room W31-223, 617-324-7526, titleIX@mit.edu. Inquiries about the laws and about compliance may also be directed to the US Department of Education, Office for Civil Rights, Region I, 5 Post Office Square, 8th Floor, Boston, MA 02109-3921, 617-289-0111, OCR.Boston@ed.gov.

[*] *The ROTC programs at MIT are operated under Department of Defense (DoD) policies and regulations, and do not comply fully with MIT's policy of nondiscrimination with regard to gender identity. MIT continues to advocate for a change in DoD policies and regulations concerning gender identity, and is committed to providing alternative financial assistance under a needs-based assessment to any MIT student who loses ROTC financial aid because of these DoD policies and regulations.*

https://policies.mit.edu/employment-policy-manual/10-employment-policies

MIT Policy on Harassment

In order to create a respectful, welcoming and productive community, the Institute is committed to providing a living, working and learning environment that is free from harassment.

Harassment is defined as unwelcome conduct of a verbal, nonverbal or physical nature that is sufficiently severe or pervasive to create a work or academic environment that a reasonable person would consider intimidating, hostile or abusive and that adversely affects an individual's educational, work, or living environment.

In determining whether unwelcome conduct is harassing, the Institute will examine the totality of the circumstances surrounding the conduct, including its frequency, nature and severity, the relationship between the parties and the context in which the conduct occurred.

https://policies.mit.edu/policies-procedures/90-relations-and-responsibilities-within-mit-community/94-harassment

Complaint and Grievance Procedures for Students at MIT

Students who believe they have been treated improperly, for any reason, are encouraged to raise their concerns. Students who have difficulty in their living groups should raise these problems within the living group and with graduate residents and housemasters, as appropriate. Concerns related to the broader Institute community, including but not confined to academic or work situations, should be raised directly with professors, instructors, departmental advisors and

immediate supervisors, Campus Police or other Institute officials, as appropriate to the nature of these problems.

In the Department of Chemical Engineering, students may wish to contact one of the following people to discuss issues of harassment, complaints, or other concerns:

- Prof. Kristala L. Jones Prather, Department Head, Room 66-350, (617)253-1950, kljp@mit.edu
- Prof. Hadley Sikes, Graduate Committee Chair, Room E19-502C, (617)253-5224, sikes@mit.edu
- Melanie Charette, Assistant Director of Academic Programs, Room 66-366, (617)253-4577, melaniec@mit.edu
- Barbara Travers, Director of Administration and Finance, Room 66-542B, (617)258-6966, barbtrav@mit.edu

A concern may also be raised at any time with any of the following MIT personnel:

- Nicholas Diehl or Judi Segall, Ombudsperson, Room 10-359, (617)253-5921, diehln@mit.edu or jsegall@mit.edu
- Ramona Allen, Vice President for Human Resources, Room NE49-5000, (617)253-6512, ramona@mit.edu
- Sarah Rankin, Institute Title IX Coordinator, Room W31-223, (617) 324-7526, srankin@mit.edu
- Suraiya Baluch, Associate Dean for Graduate Education, Room 35-338, (617) 258-0304, baluch@mit.edu

If the complaint is against another student and cannot be resolved otherwise, the Office of the Dean for Student Life may assist (Room 4-110, (617)253-4052), or the case may be referred to the Committee on Discipline. For further information on the Committee on Discipline, please refer to the MIT Bulletin. (Detailed procedures of the Committee on Discipline are stated in Committee on Discipline Rules and Regulations, which is available from the Office of the Dean for Student Life (http://cod.mit.edu)

The Institute's policy is that individuals will not be reprimanded, or discriminated against, for initiating an inquiry or a complaint. The Institute's policy is to recognize and respect the rights of any individual against whom a complaint has been brought.

The above procedures are intended to resolve issues within the Institute, and follow the guidelines explained in the MIT Policies and Procedures Guide https://policies.mit.edu/policies-procedures. The procedures are not ordinarily available to deal with the substance of a complaint that has been formally taken outside the Institute.

Normally, while a complaint is being pursued internally, a complainant is expected to represent himself or herself directly; individuals are free to obtain the support and assistance of a co-worker or fellow student or any other MIT associate in presenting their concerns. "MIT associate" is a

person who is currently a member of the MIT community, mainly a student, faculty member, staff member, or other employee, but not a member of the complainant's immediate family (parent, sibling, spouse, or child) so that issues of familial loyalty do not cloud the resolution of the complaint.

Once a complaint is presented or an inquiry has begun, a determined effort should be made at each step, either to resolve the problem, or to refer it to the next step, within one week. Throughout the entire complaint process, the complainant should be assured that the information provided will be kept confidential, insofar as the individual wishes it, or until such time as the individual agrees that a third party, or parties, must be informed to facilitate action. This assurance of confidentiality may be qualified: for example, by the duty placed by law on persons receiving complaints of particular types.

Academic Honesty

MIT assumes that all students come to the Institute for a serious purpose and expect them to be responsible individuals who demand of themselves high standards of honesty and personal conduct. Cheating, plagiarism, unauthorized collaboration, and other forms of academic dishonesty are considered serious offenses for which disciplinary penalties can be imposed.

Some academic offenses by students may be handled directly between a faculty member and the student, possibly with the assistance of the Department Head. More information on academic honesty can be found on the MIT website at https://integrity.mit.edu.

Part X: Campus Resources

Online portal for resources related to the following topics: Academic Planning and Tools; Activities, Arts and Recreation; Advising and Academic Support; Careers, Jobs, and Internships; Essentials; Finances; Housing, Dining and Transportation; International Opportunities; Personal Support and Wellness; Professional Development; Public Service; Research; Safety; Social Justice and Inclusion. http://resources.mit.edu

Campus Phone Numbers

To dial on-campus numbers from a cell phone or off-campus line:

To reach the MIT Police, dial 100 from a campus phone or dial 617-253-1212 from a cell phone or off-campus line.
2-xxxx = (617) 452-xxxx
3-xxxx = (617) 253-xxxx
4-xxxx = (617) 324-xxxx
7-5xxx = (617) 577-5xxx
8-xxxx = (617) 258-xxxx

A Word on Numbers: Majors

If you hadn't noticed already, many things at MIT are referred to by numbers. Buildings, rooms, classes, departments—almost everything has a number! For instance, an MIT student might say, "I am Course 8," instead of saying, "I am a Physics major." As a Chemical Engineering student, you are in Course 10 (you may have noticed that all ChemE course numbers begin with 10). For your enlightenment, and to facilitate communication between you and your students, here is the full list of departments by number:

Course	Department
1	Civil and Environmental Engineering
2	Mechanical Engineering
3	Materials Science and Engineering (DMSE)
4	Architecture
5	Chemistry
6	Electrical Engineering and Computer Science (EECS)
7	Biology
8	Physics
9	Brain and Cognitive Sciences (BCS)
10	Chemical Engineering
11	Urban Studies and Planning
12	Earth, Atmospheric and Planetary Sciences (EAPS)
14	Economics
15	Management (Sloan)
16	Aeronautics and Astronautics
17	Political Science
18	Mathematics
20	Biological Engineering
21A	Anthropology
21G	Global Studies and Languages
21H	History
21L	Literature
21M	Music & Theater Arts
22	Nuclear Science and Engineering
24	Linguistics and Philosophy
CMS/21W	Comparative Media Studies/Writing
CSB	Computational & Systems Biology
HST	Health Sciences and Technology
IDSS	Institute for Data, Systems, and Society
MAS	Media Arts & Sciences (Media Lab)
STS	Science, Technology and Society
WGS	Women's & Gender Studies

Buildings

Every building at MIT has a number. Odd numbered buildings are to the west of the Great Dome (Building 10), and even numbered buildings are to the east. Buildings in the West, Northwest, or East portions of campus have a letter preceding the number (i.e., NW14 is in the Northwest). If you use a smartphone to navigate your way around campus, Google Maps shows the building numbers for many buildings on the MIT campus. There is also an app for MIT campus maps available for free download, information available here: https://ist.mit.edu/mit-mobile-app

Office of Graduate Education (OGE)

Staff in the Office of Graduate Education provide advice and counsel on a variety of issues including faculty/student relationships, changing your advisor, conflict negotiation, funding, academic progress, interpersonal concerns, and a student's rights and responsibilities. They also provide clarification about Graduate Policies and Procedures.

Associative Dean Suraiya Baluch is available to meet with students, 35-338, 617-258-0304, baluch@mit.edu
http://oge.mit.edu/

MIT Ombuds Office

The MIT Ombuds Office helps people express concerns, resolves disputes, manages conflicts, and learn more productive ways of communicating. The Ombuds Office serves as an independent, confidential*, neutral, and informal resource to the diverse MIT community. Room 10-213, 617-253-5921, http://ombud.mit.edu/

Institute Discrimination & Harassment Response Office (IDHR)

Any student, faculty, or staff member who has concerns about gender discrimination, including any concerns pertaining to sexual misconduct, is encouraged to seek the assistance of those listed on the IDHR website. They will provide information on resources for assistance and options to address concerns. Those options may vary depending on the nature of the complaint, whether the Complainant is a student, faculty, or staff member, the wishes of the Complainant regarding confidentiality, and whether the Complainant prefers to proceed formally or informally.

You can reach out to anyone listed on the following website or the email listed below for an informed conversation of to report a concern:
http://idhr.mit.edu/our-office/about W31-223, idhr@mit.edu

iREFS

iREFS provide confidential, peer-to-peer support for all graduate students at the Institute and also point students to other resources on campus. They are graduate students formally trained

and certified in conflict management skills. The iREFS also teach conflict management workshops upon request. To meet with an iREF, students can directly contact individual iREFS via the emails listed on the website below or email irefs-contact@mit.edu to ask for a meeting. Your request is seen by the iREFS co-chairs, who will forward your request to an iREFS member that best meets your preferences.
https://capd.mit.edu/resources/irefs/

MIT Medical

MIT Medical provides routine and urgent medical care as well as mental health and counseling services for the MIT community, including students.
Building E23, 617-253-4481, https://health.mit.edu/

Student Mental Health & Counseling

MIT Medical's Student Mental Health and Counseling Services works with students to identify, understand, and solve problems, and to help transform that understanding into positive action. MIT Mental Health is available to anyone in the MIT community with problems, questions, or concerns. For urgent issues, a mental health clinician is on call and available 24 hours a day, seven days a week. There are walk-in urgent hours weekday afternoons from 2:00-4:00pm.
Building E23 – 3rd Floor, 617-253-2916 (Appointments and Urgent Concerns on Weekdays), 617-253-4481 (Urgent Concerns on Nights and Weekends),
http://medical.mit.edu/services/mental-health-counseling

MIT Community Wellness

Community Wellness at MIT Medical works with the entire MIT community to provide the resources and programs that can help you make healthy choices. Their offerings include: Exercise and Fitness; Spouses & Partners Connect; Sleep; Stress Reduction, Mindfulness, and Relaxation; Notice & Respond Workshops; Sexual Health; Health and Wellness Coaching; Eating Healthfully; Family Support; MedLinks; and MindHandHeart. They work with all members of the MIT community.
Room E23-3rd Floor, 617-253-1316, wellness@mit.edu
https://medical.mit.edu/services/community-wellness

Violence Prevention & Response (VPR)

Violence Prevention and Response is MIT's primary, on-campus resource for preventing and responding to interpersonal violence, including sexual assault, dating and domestic violence, stalking, and sexual harassment. Their prevention specialists work with the entire campus to educate and raise awareness. Their hotline is available 24 hours a day to support survivors in deciding what to do next.
24-Hour Hotline: 617-253-2300, VPRadvocate@med.mit.edu,
https://medical.mit.edu/community/violence-prevention

Graduate Student Council (GSC)

The GSC exists to enhance the overall graduate experience at MIT by promoting the general welfare and concerns of the graduate student body, creating new programs and initiatives to provide opportunities for growth and interaction, and communicating with the MIT Administration and Faculty on behalf of graduate students. The GSC is led by the Executive Committee and has various committees and boards to address graduate student issues.
http://gsc.mit.edu/

MIT Career Advising & Professional Development

Career Advising & Professional Development guides all students as they explore and prepare for careers and health professions.
E17-294, 617-715-5329
https://capd.mit.edu/

Writing and Communication Center (WCC @ MIT)

The WCC @ MIT offers free professional advice to MIT undergraduate students, graduate students, post-docs, faculty, lecturers, staff members, spouses, alums, visiting scientists and scholars. The WCC is staffed completely by communication experts. The WCC also provides specialized help to those for whom English is a second language and offers practice in pronunciation and conversation.

Register or Schedule an Appointment Online: http://mit.mywconline.com
E18-233, 617-253-3090, writing-center@mit.edu
http://cmsw.mit.edu/writing-and-communication-center/

International Students Office

The ISO serves all incoming and currently enrolled international students at the Institute. The ISO assists students in maintaining their legal status in the United States, provides support for their dependents, and promotes interaction with and integration into the MIT community at large.

Chemical Engineering ISO Advisor: Ms. Janka Moss, janka@mit.edu
E18-219, 617-253-3795, iso-help@mit.edu
http://iso.mit.edu/

LBGTQ+ Services

An Intercultural Resource for Diverse Gender, Romantic, and Sexual Identities
LBGTQ+ Services supports numerous student, employee, and alumni groups as well as other departments and initiatives on campus aiming to foster equity, intersectionality, and the continuum of social justice. From individual student support to organizational development and

institutional policy advocacy, LBGTQ+ Services' support, programming, and educational endeavors aim to enhance the experiences of MIT's LBGTQ+ community.

MIT Rainbow Lounge, Walker Memorial Second Floor (50-250)
LGBTQ@MIT: 617-253-5440, lgbt@mit.edu
https://lbgtq.mit.edu/

Office of Multicultural Programs

The Office of Multicultural Programs (MCP) provides support, advocacy, and celebrates our diverse undergraduate and graduate student populations by providing a myriad of educational and social opportunities. They help create a brave space for students to learn more about their own personal identity while valuing and respecting others. The Office of Multicultural Programs provides support for 70+ multicutural student groups on MIT's campus. From advising, event planning, organization support, and event funding, The Office of Multicultural Programs serves as a resource to both student groups and student leaders who seek to foster an inclusive campus environment at MIT.

A full list of multicultural student groups is available online here:
http://studentlife.mit.edu/omp/about-omp/multicultural-organizations

Nina DeAgrela, Assistant Dean for Intercultural Engagement and Multicultural Programs – Office of Multicultural Program, 617-253-0225, tonina@mit.edu
http://studentlife.mit.edu/omp

SPXCE: Social Justice Programming & Cross Cultural Engagement

With a student-centered approach, the Social Justice Programming & Cross Cultural Engagement Intercultural Center (SPXCE, pronounced "space") works to foster a more inclusive, equitable, and affirming MIT campus climate. As a collaborative initiative between the Office of Multicultural Programs and LBGTQ@MIT, the SPXCE provides intersectional social justice education, support, community-building, and leadership development. The SPXCE serves as a place where students can feel at home and exist in their wholeness while exploring all of their identities authentically with compassion and care.

SPXCE Intercultural Center, W31-110, Open M-F, 10:00am-8:00pm
https://spxce.mit.edu/

Spiritual Support: MIT Office of Religious, Spiritual, and Ethical Life (ORSEL)

At MIT, there are about forty active student religious organizations on campus, many of which are supported by one of twenty-five ORSEL affiliated professionals. Affiliates support on-campus programming, provide confidential one-on-one counseling, and advise student religious organizations.

Through regular opportunities for worship, meditation, prayer, and study, the office is a resource for students, faculty, and staff, of all faith traditions and belief systems. The chaplains provide religious, spiritual, and educational programming, as well as confidential* counseling and crisis support.
http://studentlife.mit.edu/orsel

*Chaplains who are ordained clergy within their religious traditions are confidential resources for members of the community.

GAIN (The Graduate Assistance and Information Network)

MIT/GAIN is a free, 24/7 confidential service that can make life easier for students and their families. One call puts you in touch with work-life experts who can provide personalized resources and referrals across the wide range of topics listed here: Legal; Work & Career; Parenting; Financial; Home & Daily Living; Wellness.

844-MIT-GAIN, info@mitgain.com
http://mitgain.com

MIT Work-Life Center

The MIT Work-Life Center offers a wide range of programs and resources that address specific life issues and events. Call on us whenever you need a solution, big or small. Whatever your phase of life, whatever your challenge, we're here to lend support and connect you with helpful resources. Consultations and referrals are available at no cost to MIT faculty, staff, postdocs, and graduate students, as well as their partners and families

NE49-5000, 617-253-1592, worklife@mit.edu
http://hrweb.mit.edu/worklife/welcome

MIT Spouses & Partners Connect

MIT Spouses & Partners Connect supports the personal, social, and professional growth of all spouses and partners of MIT community members who have relocated to the Boston area. They provide consultations, programs, events, and other opportunities for our members to connect with each other, make friends, learn English, and get information about living and parenting in Boston.

E23-385, 617-253-1614, spousesandpartners@mit.edu
http://spouses.mit.edu/

Child Care & Parenting Resources

The MIT Work-Life Center provides comprehensive resources and assistance for MIT parents who need guidance around finding and choosing child care, schools and summer camps.
https://hr.mit.edu/worklife/child-care

The MIT Work-Life Center offers an internationally recognized program of services to support MIT community members who are raising children.
https://hr.mit.edu/worklife/parenting

Financial Literacy Initiative

In 2015, the OGE, in collaboration with MIT Federal Credit Union (FCU), launched a initiative to address and improve student financial literacy. Part of that initiative is the introduction of iGrad, a financial literacy portal with resources and tools available to the MIT community.
https://oge.mit.edu/finances/financial-literacy/
https://mit.igrad.com/

Registrar's Office

Includes the Academic Calendar, Registration (including add-drop), Subjects, and Transcripts/Enrollment Verification
https://registrar.mit.edu/

Student Financial Services

11-120, 617-258-8600, sfs@mit.edu
http://sfs.mit.edu/

Graduate, Family, and Off-Campus Housing

http://housing.mit.edu/graduatefamily/graduate_family_housing

Parking & Transportation

There are many ways to get around, both on campus and off campus. All of the details are available through the Parking and Transportation Office (http://web.mit.edu/facilities/transportation/index.html) but here are some highlights:

- Public Transportation: MIT subsidizes the purchase of MBTA monthly passes for students.
- Parking: Options for paid student parking permits on campus.
- Biking: Subsidized Bluebike membership (bike share), bicycle storing, Fix-It Stations
- Shuttles: MIT offers many different shuttles as a way to get around, including Saferide (operates at night within and around the MIT campus) and the TECH shuttle (available around campus on weekdays)

Collective Bargaining Agreement

The members of MIT's Graduate Student Union voted to ratify the contract their leaders agreed to in September 2023. In negotiating this contract, in concert with a faculty advisory committee, MIT sought to be responsive to our graduate students without jeopardizing its

research and educational enterprise or the interests of other members of the MIT community. You can read the details of the Collective Bargaining agreement on the HR website. https://hr.mit.edu/gsu?check_logged_in=1.

Part XI: Important Departmental Forms

Most departmental forms are now electronic forms, and may be found at: https://cheme-resources.mit.edu/milestones

PhD Timeline by Year

Year 1

- Core courses: 10.34, 10.40 10.50 (Fall), 10.65 (Spring)
- English language courses (as required)
- 10.990 in Fall
- Advisor selection in Fall
- 10.992 in Spring
- PhDCEP: 10.551 in Spring
- Submit Practice School interest form

Year 2

- Thesis proposal in Fall
    - Submission of teaching semesters
- 10.991 in Fall
- PhDCEP: 10.801 in IAP
- 10.992 in Spring
- Teaching requirement 10.TAC (if in the teaching pool)

Year 3

- Annual thesis committee meeting
- 3rd year seminar presentation
- Teaching requirement 10.TAC (if in the teaching pool)
- 10.991 in Fall
- 10.992 in Spring

Year 4

- Plan-to-finish thesis committee meeting
- 10.991 in Fall
- 10.992 in Spring

Year 5/6

- Final thesis committee meeting
- 10.991 in Fall (unless on degree list)
- 10.992 in Spring (unless on degree list)
- Thesis defense
- Submission of thesis

In Years 2 to 6:

- Biology requirement (complete waiver, 7.00x, or take 7.012/7.013/7.014)
- ChemE elective (9+ units)
- Minor requirements (3 courses, 24 units total) – requires prior approval via forms

ADVISOR SELECTION FORM

CHEMICAL ENGINEERING DEPARTMENT

Directions: All PhD / ScD / PhDCEP students should submit this form to the Academic Office (66-366) by December 18, 2026 This form will not be accepted without all of the required Faculty Signatures.

STUDENT NAME:_____

I. RECORD OF MEETINGS WITH POTENTIAL RESEARCH ADVISORS

As part of the Research Advisor selection process, I have discussed possible research projects with the following six Chemical Engineering faculty:

Faculty Name (Please Print)	Date	Faculty Signature
1.		
2.		
3.		
4.		
5.		
6.		

II. ADVISOR & PROJECT SELECTION

1. FIRST CHOICE

Advisor Name:_____

Project Title:_____

Advisor Agreement: I hereby agree that if the student named above is assigned to me as one of the two doctoral students allowed by the Department, I will accept him/her as a doctoral student in my research group **(Advisor Signature, on or after November 16, 2026)** _____.

2. SECOND CHOICE

Advisor Name: _____

Project Title: _____

RECORD OF THESIS COMMITTEE MEETINGS

STUDENT NAME:

As a Departmental rule, every graduate student in the PhD program should have a Thesis Committee Meeting at least once every 12 months following the Thesis Proposal Presentation (for additional information about Thesis Committee Meetings, please consult the Chemical Engineering Graduate Student Handbook).

Your Academic Office record indicates (see below) that you have not had a Thesis Committee meeting during the last 12 months. In view of that, you should schedule a meeting within the next 3 months. Failure to do so will constitute Unsatisfactory Progress toward the doctoral degree, and may result in denial of future registration.

On Registration Day, please submit this form, signed by you and your research advisor(s), to the Graduate Officer. This is your acknowledgement that you need to convene your thesis committee soon (within the next 3 months).

RESEARCH ADVISOR(S):

THESIS INFORMATION

Title:

Thesis Proposal Completion date:

Committee Dates:

Thesis Committee Members:

Student Signature:

Research Advisors (s) Signature:

CHEMICAL ENGINEERING DEPARTMENT
PHD/SCD/PHDCEP/MS STUDENT DEPARTURE FORM

NAME:_____

ROOM NUMBER:_____

PHONE NUMBER:_____

DATE:_____

1. Office and/or laboratory space is in satisfactory condition. All chemicals are under my care.

   _____Research Advisor(s)

2. Final Date of Support by Research Advisor: _____

   Research Advisor's Initials: _____

3. Laboratory space is in satisfactory condition:
   a) All chemicals (whether the bottles are opened or unopened), all wastes, and all samples must either be removed from your laboratory and properly disposed of, or someone else (your advisor, another student, or lab mate) must sign this form indicating that he/she accepts all chemicals, wastes and samples left in your laboratory.
   b) Boxes, junk, etc. have been discarded.
   c) Laboratory is orderly and clean

   _____

   Chris Monaco (room 66-371, monacoc@mit.edu)
   or Brian Smith (66-471, 3-6238, or bssmith@mit.edu)

4. All keys and materials borrowed from the Chemical Engineering Department have been returned.
   Yes ____ No____*

   _____

   Group Administrative Assistant

5. Returned Credit Card: _____

   Group Administrative Assistant

***Keys are not being returned at this time because student is staying in the department for _____ months as _____ (postdoc or on voucher payroll) working with Prof. _____.**