



**Chemical Engineering**

**COURSE 10**

**2023-2024**

**UNDERGRADUATE  
STUDENT HANDBOOK**



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## **Chemical Engineering Student Office**

The Student Office is located in 66-366, is the primary source for information about admissions, registration, financial support and awards, grades, academic records, and graduation. In addition, the Academic Administrator for the Department of Chemical Engineering, is also available to assist with advising and counseling on personal and academic matters, or can refer you to other resource people at MIT.

The Student Office is a welcoming and inclusive environment. If you have any questions, please feel free to stop by, grab some snacks/candy, e-mail, call, or find us on Slack!

### **Staff List**

#### **Melanie Charette**

Academic Administrator  
Student Office, 66-366  
[melaniec@mit.edu](mailto:melaniec@mit.edu)  
617.253.4577

#### **Adrienne Bruno**

Undergraduate Academic Coordinator  
Student Office, 66-366  
[brunoa@mit.edu](mailto:brunoa@mit.edu)  
617.253.4579

#### **Matthew Sweeney**

Graduate Academic Coordinator  
Student Office, 66-366  
[vsweeney@mit.edu](mailto:vsweeney@mit.edu)  
617.452.2162

### **The Undergrad Computer Lab (“The Bunker”) 66-070**

Please remember to be mindful about keeping the Bunker clutter free and to pick up after yourselves so that the cleanliness of the space can be maintained – no food or drink is permitted in the space. Adrienne Bruno will be the point of contact for any needs or computer issues that occur in the Bunker. The goal is to make sure that everything is working efficiently and that your concerns are promptly addressed throughout the year. Your safety is extremely important so we ask that you not let in any unfamiliar people into the space and report unusual activity to Melanie Charette [melaniec@mit.edu](mailto:melaniec@mit.edu) or Adrienne Bruno [brunoa@mit.edu](mailto:brunoa@mit.edu). For key card access to the Bunker, please contact Timothy Elizabeth Xavier, [xaviert@mit.edu](mailto:xaviert@mit.edu). In an emergency, contact campus police at (617) 253-1212, or call 911.

### **The Undergrad Lounge 66-252**

The Undergrad Lounge space is new for the 2023-2024 Academic Year, and is meant to be an informal gathering space for Course 10 students to use for study groups or similar. Food and drink are allowed in the space, but please clean up after yourselves so the space remains clean and tidy. Key card access for this space

will be granted by Timothy Elizabeth Xavier, [xaviert@mit.edu](mailto:xaviert@mit.edu). Access to this space is only available for Course 10 undergraduates; please do not let unfamiliar people into the space. Adrienne Bruno in the student office [brunoa@mit.edu](mailto:brunoa@mit.edu) is the main contact for issues with this space.

### **Room reservations**

To make a conference room reservation in Buildings 66 or E17, undergrads should email [cheme-conf-room@mit.edu](mailto:cheme-conf-room@mit.edu).

### **Lunchroom/Breakroom (66-201)**

66-201 is a general working/eating space for everyone in the Department. You will receive emails when the room is reserved for events and thus unavailable. The door code to 66-201 is 8-6-7-5-3. Please do not prop the doors open, and always clean up after yourselves and return furniture to its original location if you move it.

### **Department Computer Support**

The Chemical Engineering Computer Support Team consists of Jim Hardsog and John Mancuso; they can be contacted for any computing related issues including computer viruses, email issues, network access, printing, software, and obtaining a new IP address for a computer or printer. The computer support team is located in rooms 56-483 and 66-380 and can be reached by telephone at extension 3-0088 or by email at [cheme-computer@mit.edu](mailto:cheme-computer@mit.edu).

## **Career and Professional Development**

[The Chemical Engineering Communication & Career Lab](#) offers one-on-one communication coaching with trained graduate students and postdocs in Chemical Engineering. We offer field-specific support and training in written, oral, and visual communication. Our team of Communication Fellows can help with resumes, cover letters, graduate school applications, competitive fellowships and more. Book an appointment at any stage of the communication process – the earlier the better. We can help you brainstorm your application strategy, sketch a design for your conference poster, or prep for an internship interview. Attend our workshops and events and learn how to navigate the Fall Career Fair and apply for the NSF Graduate Fellowship Program. After hours, check out our online [CommKit](#) for quick guides and examples of successful communication by chemical engineers.

### **Career Resources across MIT**

[The Career Advising & Professional Development Office](#) has additional resources for career exploration, professional development, and your job or internship search. Explore resources for career counseling, pre-health advising, career fairs, and more.

[Handshake](#) can help keep you abreast of job and internship opportunities. Post your resume and sign up for job alerts for the latest opportunities in your field. Save a targeted search and get updates when jobs are added matching your criteria. Companies also share information sessions and networking events on this platform.

[Alumni Advisors Hub](#) connects MIT students with alumni mentors for career support. Build your network and seek career advice from grads who regularly volunteer time for career conversations with students.

[Infinite Connection](#) gives you access to an expanded network of MIT alumni, listing graduates by major and their current jobs.

## ChemE Undergrad Seminars

- The Undergrad Seminar series (aka Ten Talks) is designed to allow our sophomores, juniors and seniors to understand how their chemical engineering training might be used in the real world, the range of different career choices and outcomes available to ChemE's, and what those different careers and paths look like. Past seminar speakers have been Institute Professor Robert Langer, C.E.O. of Flagship Pioneering Noubar Afeyan, and Massachusetts State Representative and ChemE alumna '09 Maria Robinson. Keep an eye out for announcements from the Student Office for these talks in the fall and spring semesters.

## General MIT Policies

The Massachusetts Institute of Technology is committed to the principle of equal opportunity in education and employment. The Institute does not discriminate against individuals on the basis of race, color, sex, sexual orientation, gender identity, religion, disability, age, genetic information, veteran status, ancestry, or national or ethnic origin in the administration of its educational policies, admissions policies, employment policies, scholarship and loan programs, and other Institute administered programs and activities, but may favor U.S. citizens or residents in admissions and financial aid.

The Vice President for Human Resources is designated as the Institute's Equal Opportunity Officer and Title IX Coordinator. Inquiries concerning the Institute's policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to Ramona Allen, Vice President for Human Resources, Room NE49-5000, 617-253-6512, or to the Manager of Staff Diversity and Inclusion, Room NE49-5000, 617-452-4516. Inquiries about the laws and about compliance may also be directed to the Assistant Secretary for Civil Rights, US Department of Education.

The Vice President for Human Resources is designated as the Institute's Equal Opportunity Officer and Title IX Coordinator. Inquiries concerning the Institute's policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to Ramona Allen, Vice President for Human Resources, Room NE49-5000, 617-253-6512, or to the Manager of Staff Diversity and Inclusion, Room NE49-5000, 617-452-4516. Inquiries about the laws and about compliance may also be directed to the Assistant Secretary for Civil Rights, US Department of Education.

## MIT Policy on Harassment

Harassment of any kind is not acceptable behavior at MIT; it is inconsistent with the commitment to excellence that characterizes MIT's activities. MIT is committed to creating an environment in which every individual can work, study, and live without being harassed. Harassment may therefore lead to sanctions up to and including termination of employment or student status.

Harassment is any conduct, verbal or physical, on or off campus, that has the intent or effect of unreasonably interfering with an individual or group's educational or work performance at MIT or that creates an intimidating, hostile, or offensive educational, work, or living environment. Some kinds of harassment are prohibited by civil laws or by MIT policies on conflict of interest and nondiscrimination. Harassment on the basis of race, color, sex, disability, religion, national origin, sexual orientation, gender identity, veteran's status, or age includes harassment of an individual in terms of a stereotyped group characteristic, or because of that person's identification with a particular group.

Sexual harassment may take many forms. Sexual assault and requests for sexual favors that affect educational or employment decisions constitute sexual harassment. However, sexual harassment may also consist of unwanted physical contact, requests for sexual favors, visual displays of degrading sexual images, sexually suggestive conduct, or offensive remarks of a sexual nature.

The Institute is committed under this policy to stopping harassment and associated retaliatory behavior. All MIT supervisors have a responsibility to act to stop harassment in the areas under their supervision. Any member of the MIT community who feels harassed is encouraged to seek assistance and resolution of the complaint. MIT provides a variety of avenues by which an individual who feels harassed may proceed, so that each person may choose an avenue appropriate to his or her particular situation. Institute procedures are intended to protect the rights of both complainant and respondent, to protect privacy, and to prevent supervisory reprisal. General complaint procedures are described in Section 9.6 Complaint and Grievance Procedures as well as the Guidelines for Raising Complaints about 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. Paula T. Hammond, Department Head, Room 66-350, (617)258-7577, [Hammond@mit.edu](mailto:Hammond@mit.edu)
- Dr. Tom Kinney, Undergraduate Officer, Room 66-368, (617)258-7141, [tkinney@mit.edu](mailto:tkinney@mit.edu)
- Melanie Charette, Academic Administrator, Room 66-366, (617)253-4577, [melaniec@mit.edu](mailto:melaniec@mit.edu)
- Demetri Fadel, Administrative Officer, Room E18-670, 617-324-5388, [rdfadel@mit.edu](mailto:rdfadel@mit.edu)

A concern 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, [dieln@mit.edu](mailto:dieln@mit.edu) or [jsegall@mit.edu](mailto:jsegall@mit.edu)
- **Ramona Allen**, Vice President for Human Resources, Room NE49-5000, (617) 253-6512, [ramona@mit.edu](mailto:ramona@mit.edu)
- **Sarah Rankin**, Institute Title IX Coordinator, Room W31-223, (617) 324-7526, [srankin@mit.edu](mailto:srankin@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://web.mit.edu/committees/cod/>).

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 <http://web.mit.edu/policies/>.

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>.



## Tutoring

Tutoring is provided by the department for sophomore and junior 10.x subjects. The tutors are juniors and seniors in the department.

If you would like help, send a request to the tutors at [che\\_tutors@mit.edu](mailto:che_tutors@mit.edu). (If you don't receive a reply, keep asking; they're busy, too!). When a tutor responds, set up time and place to meet that works for both of you, or connect via Zoom.

Contact tutors: [che\\_tutors@mit.edu](mailto:che_tutors@mit.edu)

Interested in becoming a tutor? Contact Dr. Tom Kinney [tkinney@mit.edu](mailto:tkinney@mit.edu).

## MIT Chemical Engineering Student Organizations

### American Institute of Chemical Engineers (AIChE) Student Chapter

The American Institute of Chemical Engineers is a professional organization representing nearly 60,000 chemical engineers. AIChE encourages the activities of student chapters at academic departments, and works to integrate the student members into the professional world.

At MIT, the AIChE student chapter provides a voice for undergraduates in department affairs, encourages the professional development of students, and provides seminars concerning graduate school application, job hunting, and life in industry. The chapter also organizes study breaks and student-faculty get-togethers.

### AIChE Objectives

The objectives of this AIChE chapter are (1) to promote the professional development of its members through its programs and by its relations with other student chapters and the parent body, the American Institute of Chemical Engineers, and (2) to contribute to the development of chemical engineering at MIT through activities involving the faculty and student members.

Our student chapter does not necessarily have conditions for membership and, in a sense, functions as a student interest organization. All chemical engineering students in the Department are invited to participate in AIChE activities. These include attending industrial seminars, study breaks, lunches, and opportunities to get to know faculty and staff within the Department.

### AIChE Executive Board Members 2023-2024

President: Alfonso Restrepo ('24, 10B) & Yijun Yang ('24, 10)

VP External & VP Finance: Fiona Shortt ('24, 10)

VP Internal: Annlin Su ('24, 10ENG)

VP Chapter Relations: Janet Teng ('25, 10ENG)

Senior Class Reps: Ezra Gordon ('24, 10B) & Riki Smah ('24, 10B)

Junior Class Reps: Alondra Hernandez ('25, 10ENG) & Porter Bowen ('25, 10ENG)

Mentoring Chair(s): TBD  
Freshman & Alumni Chair(s): Jack Suggs ('24, 10B) & Rachel Ahlmark ('24, 10)  
Corporate Relations Chair(s): Sarah Hernandez ('25, 10ENG) & Lana Van Note ('25, 10ENG)  
Intracollegiate Chair: Andrea Aude ('24, 10)  
Facilities Chair: Katie Bailey ('24, 10) and Joshika Chakraverty ('25, 10ENG)  
DEI Representative: Megan Eaton ('24, 10) & Gabrielle Moore ('24, 10)  
Webmaster: TBD

### **Undergraduate Student Advisory Board (USAB)**

The Undergraduate Student Advisory Board is a student committee that advises the Department of Chemical Engineering on matters related to the academic and professional growth of the undergraduate student body. USAB's main focus is to enhance the student experience in the department and provide input to continuously improve the undergraduate program. The board consists of two representatives from each undergraduate class as well as two reps from AICHE and they will have regular meetings throughout the year with the Department Chair and the Student Office.

Class of 2024 Representatives: Rachel Ahlmark, Ani Sibel

Class of 2025 Representatives: Janet Teng, Sydney Pyon

Class of 2026 Representatives: TBD in Fall 2023

### **National Organization of Black Chemists and Chemical Engineers (NOBCChE)**

NOBCChE is a non-profit professional organization dedicated to assisting black and other minority students and professionals in fully realizing their potential in academic, professional, and entrepreneurial pursuits in chemistry, chemical engineering, and allied fields.

<https://www.nobcche.org/about-us>

President: Priya Montrieffe

## **Undergraduate Committee Members**

Dr. Justin Buck	26-033	720-201-0509-	jbuck@mit.edu
Professor Patrick Doyle	E17-504F	617-253-4534	pdoyle@mit.edu
Dr. Tom Kinney	66-368	617-258-7141	tkinney@mit.edu
Prof. Bradley Olsen (chair)	66-558A	617-715-4548	bdolsen@mit.edu
Prof. Kristala Prather	E17-504G	617-253-1950	kljp@mit.edu
Professor Gregory Rutledge	E17-504D	617-253-0171	rutledge@mit.edu
Prof. William Tisdale	66-458	617-253-4975	tisdale@mit.edu
Prof. Bernhardt Trout	E19-502B	617-258-5021	trout@mit.edu

## Diversity, Equity and Inclusion Committee

The charge of the Diversity Committee is to coordinate and synergize our ongoing efforts and recommend new ones, harmonize operations, catalyze discussions and generate ideas, and ultimately route those ideas for any further needed discussion and ultimately implementation by the Department.

### Executive Committee

Chris Love (co-chair)	Faculty Chair
Christelle Hayles	DEI Specialist
Melanie Charette (co-chair)	Academic Administrator
Hadley Sikes	Graduate Officer
Tom Kinney	Undergraduate Officer
Will Tisdale	Graduate Admissions Chair
Paula Hammond	Department Head, <i>ex-officio</i>

## Declaring a minor

Information from <https://registrar.mit.edu/registration-academics/academic-requirements/majors-minors/declaring-minor>

Minor programs consist of five to seven subjects, with a typical program including six. You must designate your minor between the end of your sophomore year and Add Date one full term prior to receiving your degree. Minors must be associated with an SB degree program and cannot be awarded independently. You may not minor in the area of your major and you may not earn more than two minors.

Minors are also not allowed in either field of composite degrees, such as the SB in Mathematics with Computer Science or the SB in Computer Science and Molecular Biology. The Committee on Curricula (CoC) has the authority to determine whether a specific combination is permissible.

Key points to remember:

- A minor may include subjects that count toward the General Institute Requirements (GIRs).
- Subjects taken for a minor may also count toward your departmental degree requirements with approval from your major department and the CoC.
- The minor advisor may approve transfer credit for your program, but at least half of your minor subjects must be MIT subjects.

- Of the six subjects required for a HASS minor, at most five may count toward your eight-subject HASS Requirement and only one may count toward the distribution component.
- Subjects taken under the junior-senior P/D/F grading option cannot be used for a minor.

*Please refer to Registrar's website or speak with your advisor for more details*

## **Double majors**

Information retrieved from <https://registrar.mit.edu/registration-academics/academic-requirements/majors-minors/double-majors>

In order to receive a diploma for a double major, you must complete the General Institute Requirements (GIRs) and the requirements of both majors. You must also complete two CI-H subjects and two CI-M subjects to fulfill the communication component of each major.

To apply for a double major, you must be an undergraduate with a cumulative GPA of 4.0 or higher. Students with a lower GPA will be considered on a case-by-case basis and must provide a letter with their application explaining why an exception is justified. You must also have completed at least three terms, including at least one in a department with a declared major. Transfer students must complete at least two terms at MIT, including at least one in a department with a declared major.

If you are unable to complete all the requirements for both programs, you will need to choose between graduating with a single major and continuing until you complete the second. If you decide to graduate, you may not return to MIT to complete the second major. Those who continue beyond eight terms should check with [Student Financial Services](#) regarding the impact on their financial aid.

Some key points to remember:

- You may not pursue a second major in the same area as your primary major or in either field of composite degrees.
- If a subject is approved as CI-M in both majors, you may use it to fulfill the Communication Intensive component of both programs simultaneously, with the approval of the [Subcommittee on the Communication Requirement \(SOCR\)](#).

## Undergraduate Advising

The ChemE Undergraduate Officer maintains Roadmap charts that show how a student may feasibly fulfill X, XB, and X-ENG degree requirements in four years, beginning with no advanced standing credits. Associated with these are Prerequisite Chain diagrams. Obtain these materials from the ChemE Student Office (66-366).

Based on the Roadmap, the following progress guideline is offered. Comparing the core subjects, GIRs, and units-beyond-GIRs that a student has completed (from a WebSIS degree audit) with this chart may reveal whether the student should be making extra efforts to catch up.

term completed	10.x subjects taken in the term	GIRs complete	other units complete
Sophomore Fall	10.10	10	24
Sophomore Spring	10.213,10.301	12	48
Junior Fall	10.302,10.28*,10.467*	13	78
Junior Spring	10.32,10.37, 10.26/7/9*	15	120
Senior Fall	10.490**,10.492A,B**,10.28*,10.467*	16	162
Senior Spring	10.490**,10.494A,B**,10.26/7/9*	17	195

\* Lab subjects 10.26, 10.27, 10.28, 10.29, 10.467 may be taken by juniors or seniors.

\*\* Students select from among the various 10.49x offerings. X-ENG students have other options for completing the Capstone requirement.

## Department Curriculum Requirements in Outline

### The Course X Curriculum

<http://catalog.mit.edu/degree-charts/chemical-engineering-course-10/>

- 5.12, 5.310, 5.601
- One of 5.03, 5.07, 5.13, 5.61, or 7.05
- 18.03x
- 10.10, 10.213, 10.301, 10.302, 10.32, 10.37, 10.490
- one of ICE-topics 10.492A, 10.492B, 10.493, 10.494A, 10.494B
- restricted elective – another ICE-topic, a second offering of 10.490, 10.00, 10.01, or other approved 6-unit elective
- 1 ChE lab (10.26, 10.27, 10.28, 10.29, or 10.467)
- 1 additional lab, which may be outside the department, or a 6-unit ChE lab still to be defined
- 1 ChE restricted elective of at least 9 units

- Unrestricted elective credit: 48 units

Department requirements automatically satisfy MIT GIR requirements LAB and REST; the units of subjects NOT included in GIRs will total at least 186. UROP credit contributes to the non-GIR units.

### **The Course XB curriculum**

<http://catalog.mit.edu/degree-charts/chemical-biological-engineering-course-10-b/>

- 5.07 or 7.05, 5.12, 5.601
- 7.002, 7.003 or 10.7003, 7.03, 7.06
- 18.03x
- 10.10, 10.213, 10.301, 10.302, 10.37, 10.490
- one of ICE-topics 10.492A, 10.492B, 10.493, 10.494A, 10.494B
- restricted elective – another ICE-topic, a second offering of 10.490, 10.00, 10.01, or other approved 6-unit elective
- 1 ChE lab (10.27, 10.28, or 10.29)
- Unrestricted elective credit: 48 units

Department requirements automatically satisfy MIT GIR requirements LAB and REST; the units of subjects NOT included in GIRs will total 192. UROP credit contributes to the non-GIR units.

### **The Course X-ENG Curriculum**

<http://catalog.mit.edu/degree-charts/engineering-chemical-engineering-course-10-eng/>

- 5.601
- 18.03x
- 10.10, 10.213, 10.301, 10.302, 10.37
- Foundational Concepts: 3 subjects to include LAB and 1 CI-M
- Concentration: 4 engineering subjects to include 1 CI-M
- Capstone: some ICE/thesis/project combination to total 12 units
- Unrestricted elective credit: 48 units

Department requirements automatically satisfy the MIT GIR REST requirement but the student must choose a subject that satisfies LAB; the units of subjects NOT included in GIRs will total at least 180. UROP credit contributes to the non-GIR units.

### Complications in the Curriculum

The selection of subjects in X-ENG is more flexible than in X and XB; however, that selection is constrained by (1) ensuring that MIT LAB and CI-M requirements are met (2) ensuring coherence and engineering content in the Concentration (3) ensuring that the Capstone plan meets the intent of a design/integrative experience (4) ensuring that the engineering and science content meets the ABET accreditation requirements. In consultation with a 10ENG Concentration Advisor, the student must complete an Enrollment form and a Planning form to guide the selection of Concentration and Capstone subjects. Concentration Advisors are listed at <https://cheme.mit.edu/10-eng-concentration-advisors/>.

## Requirements and Policies of the Institute

### The GIR Requirement

<http://catalog.mit.edu/mit/undergraduate-education/general-institute-requirements/>

MIT designates 5.11x or 3.091, 7.01x, 8.01x, 8.02x, 18.01x, 18.02x as General Institute Requirements for all students. In addition, each student must take eight HASS subjects, two Restricted Electives in Science and Technology (REST), and one Institute Laboratory (LAB). Normal department requirements in Course X and XB automatically satisfy the REST and LAB GIR requirements. By contrast, X-ENG students must ensure their subjects include one LAB subject.

### The HASS Requirement

Eight GIR subjects are (with few exceptions) taken in the School of Humanities, Arts, and Social Sciences (SHASS). These HASS subjects must satisfy:

- a Distribution for breadth: 1 subject from each of 3 distribution categories H(umanities), A(rts), and S(ocial sciences).
- a Concentration for depth: 3-4 subjects in a single topic. The program is chosen on the HASS Concentration form under the guidance of a HASS concentration advisor. One of these subjects may also fulfill a Distribution requirement. The Concentration Proposal form is online. See <https://registrar.mit.edu/registration-academics/academic-requirements/hass-requirement/hass-concentrations>
- further HASS electives to total 8 subjects.

For HASS information, see <http://shass.mit.edu/undergraduate/office>

### The Communication Requirement

- Students are required to complete four subjects designated CI (communication-intensive). The schedule is important: the ratio of “CI subjects completed” to “years at MIT completed” should not fall below one.
- Two of the subjects must be designated CI-H; these are normally included within the eight GIR HASS subjects. The other two subjects must be designated CI-M. In our department, labs (10.26, 27, 28, 29, 467, 7003, plus 5.310) have CI-M designation, so that a student automatically satisfies CI-M requirements by satisfying the Department requirements.
- Only one CI-H requirement may be satisfied in a term, even if multiple CI-H subjects are taken. By contrast, both CI-H and CI-M, or multiple CI-M, may be satisfied in a single term. This affects primarily XB students, who can take both a CI-H and 7.003 (10.7003) during the sophomore year, without restriction.
- (for some students, the first CI-H subject must be selected from a writing-intensive subset designated CI-HW. This is a first-year matter that seldom affects department advising.)

For lists of CI-designated subjects, see <http://web.mit.edu/commreq/cih.html>

### Grades

A good overview is at <http://facultygovernance.mit.edu/rules-and-regulations> under paragraph 2.60.

## Committee on Academic Performance – CAP

At the end of each term, the Registrar flags students with low term GPA ( $\leq 3.0$ ) or low registered load ( $\leq 35$  units) for possible CAP attention. The consequences of the CAP process for a flagged student may be NO ACTION, WARNING (with a limit on units in the following term), or REQUIRED WITHDRAWAL. Flagged students should contact their academic advisors as soon as possible.

## Common Procedures for Sophomores

### Registering Sophomores

Fall:

- Course X: normally any of 5.601, 10.10, and 18.03 that have not been completed; (these subjects are prerequisite for Spring term sophomore subjects 10.301 and 10.213). Other possibilities are 5.12 or advanced chemistry elective. Unfortunately, 5.601 precludes 7.01 by schedule conflict. (Note 5.601 ends after the first half of the term.)
- Course XB: normally any of 5.601, 10.10, and 18.03 that have not been completed; (these subjects are prerequisite for Spring term sophomore subjects 10.301 and 10.213). Other possibilities are 5.07, 5.12, and 7.03. Unfortunately, 5.601 precludes 7.01 by schedule conflict. (Note 5.601 ends after the first half of the term.). Lab 7.002 is offered in person this term, and thus is unavailable to sophomores.
- Course X-ENG: normally any of 5.601, 10.10, and 18.03 that have not been completed; (these subjects are prerequisite for Spring term sophomore subjects 10.301 and 10.213). Other possibilities are selections from the Foundational Concepts category. Unfortunately, 5.601 precludes 7.01 by schedule conflict.
- Course X-ENG students should see the Undergraduate Officer to complete the 10-ENG planning form.
- Students are required to have completed two CI subjects by the end of sophomore year. These are generally CI-H, but advanced XB majors may satisfy the CI schedule with CI-M credit for 7.003 (impractical for sophomores this term).

Spring:

- Course X: normally 10.301 and 10.213; many take 7.05 or 5.310. NOTE: The Spring 2020 offering of 5.310 will be conducted in its new (as yet, unapproved) form as a Course 10 CI-M. Students who complete it this term may petition SOCR for retroactive CI-M credit; there is precedent for such action, but approval is NOT guaranteed. Students who wish to minimize the chance of taking two *further* CI-M labs are advised to delay 5.310 until the 2020-21 academic year.
- Course XB: normally 10.301 and 10.213; many take 7.05 or 5.12. Unfortunately, 7.003 is in conflict with both 10.301 and 10.213.
- Course X-ENG: normally 10.301 and 10.213, plus a Foundation or Track subject.



- Students who have not completed 10.10 should register for it this term. To keep a reasonable load, they may have to put off 10.213 until junior year.
- Students who have not completed 5.601 must put off 10.213 until junior year. They may take 5.601 this term or next fall.
- Students are required to complete two CI subjects by the end of sophomore year. These are generally CI-H, but XB majors may satisfy the CI schedule with CI-M credit for 7.003, if they have previously taken the 7.002 pre-requisite.
- Encourage students to submit the HASS Concentration Proposal Form online (deadline is first week of second junior term).
- Please inform your advisees that tutoring is available for sophomore and junior courses. Students should request a tutor at [che\\_tutors@mit.edu](mailto:che_tutors@mit.edu).

## Other Matters Pertinent to Sophomores

- Sophomore Exploratory Option: in essence, an extension of Drop Date. A sophomore may designate, by Add Date, any one subject as exploratory.

Listener status up until the next Registration Day; doing so would remove the subject and grade from the transcript. The Exploratory option may be exercised only in the two sophomore terms. These declarations are made on the Add/Drop form.

- Minors: The student should designate the minor program by the end of the sophomore year, but no later than Add Date in the full term preceding the one in which the SB degree is awarded. (in the normal case, then, fall of senior year) The student must complete an application form for a minor in consultation with the appropriate minor advisor. The application and completion forms for HASS minors are different from those used in other fields. <http://shass.mit.edu/undergraduate/minors>.
- UROP: sophomores, now accustomed to MIT, should consider participating in a UROP.

## Looking Ahead to Junior Year

### Registering Juniors

#### Fall:

- Course X: normally 10.302 and advanced chemistry elective. Another possibility is a ChE Restricted Elective.; laboratories 5.310, 10.28, and 10.467 are offered in person this term, and thus are unavailable to juniors. However, 2.013 offers a virtual version.
- Course XB: normally 10.302, 5.07, and 7.03. Laboratories 7.002 and 7.003 are offered in person this term, and thus are unavailable to juniors.
- Course X-ENG: normally 10.302, plus Foundational Concepts and Concentration subjects.
- Course X-ENG students should see the Undergraduate Officer to complete the 10-ENG planning form, if they have not done so.
- Students are required to have completed three CI subjects by the end of junior year. These are generally two CI-H and one CI-M.
- Students who have not submitted a HASS Concentration Proposal should see to it this term. They may do so using the new online system.

#### Spring:

- Course X: normally 10.32 and 10.37; many take 10.26 or 10.27.
- Course XB: normally 10.37; many take 10.29 or 10.27. However, continue the 7.002/7.003 sequence if not completed earlier.
- Course X-ENG: normally 10.37, plus Foundation and Track subjects.
- Students who have not completed 10.213 should take it this term.
- Energy Projects Lab 10.27 meets concurrently with 10.26 and 10.29. It is regarded as equivalent to 10.26 and 10.29 for fulfilling Department requirements and carries the MIT CI-M attribute. Course XB students should register for 10.27 or 10.29; Course X and X-ENG students may register for any of the three.
- Students are required to complete three CI subjects by the end of junior year. These are generally two CI-H and one CI-M.
- Deadline for the HASS Concentration Proposal Form (submitted online) is Friday after Reg Day.

### Other Matters Pertinent to Juniors

- Junior/Senior P/D/F Option: Juniors and Seniors may take a total of two subjects to be graded as P, D, or F. These are to be electives; thus GIR, department, or minor requirements are excluded. There is no schedule restriction on the two subjects, and the designation must be made by Add date.

Minors: Students should designate the minor program by the end of the sophomore year, but no later than Add Date, in the full term preceding the one in which the SB degree is awarded. (in the normal case, then, fall of senior year) Students must complete an application form for a minor in consultation with the appropriate minor advisor. The application and completion forms for HASS minors are different from those used in other fields. <http://shass.mit.edu/undergraduate/minors>.

## Looking Ahead to Senior Year

### The Structure of ICE

X and XB seniors must take 10.490 and any one of the various 10.492, 3, 4 ICE-topic modules. The restricted elective requirement may be satisfied by a second ICE-topic, another offering of 10.490, 10.00, 10.01, or another approved 6-unit subject.

10.490 is 9 units and is a full term class. At present, the fall version will be a continuous process design; the spring version will be a batch biological process.

10.492A and B occupy first and second half terms of the fall. 10.494A and B occupy first and second half terms of the spring. 10.493 is taught over three weeks in IAP. All are 6 units.

### Other Matters Pertinent to Seniors

Anyone who has not yet made a habit of checking the Undergraduate Degree Audit should start right away!

## Sources of Information for Students

### ChE Student Office, Department of Chemical Engineering, 66-366

<https://cheme.mit.edu/resources/student-office/>

**Melanie Charette**, Academic Administrator, [melaniec@mit.edu](mailto:melaniec@mit.edu) 671-253-4577

**Adrienne Bruno**, Undergraduate Coordinator, [brunoa@mit.edu](mailto:brunoa@mit.edu) 617-253-4579

**Matthew Sweeney**, Graduate Coordinator [ysweeney@mit.edu](mailto:ysweeney@mit.edu), 617-452-2162

### Undergraduate Officer, Department of Chemical Engineering, 66-368

Dr. Tom Kinney [tkinney@mit.edu](mailto:tkinney@mit.edu), 617-258-7141

## Sources of Help for Students in Difficulty

### MIT campus emergencies

(24 hours) dial **100** on campus, or **617 253 1212**, Police, ambulance, fire, first aid, dean on call

### MIT Medical – E23

<http://web.mit.edu/medical/>

Urgent care, medical emergency (24 hours) **617 253 4481**

Mental health (M-F 2-4:00 p.m.) **E23-3<sup>rd</sup> Floor, 617 253 2916** (night/weekend **617 253 4481**)

### MIT Police: W-89

<http://police.mit.edu/>

General business **617 253 2996** (emergency: **617 253 1212**)

### Student Support Services (often called S<sup>3</sup>)

(M-F, 9 am - 5 pm) 5-104, **617 253 4861**

<http://studentlife.mit.edu/s3>

Counsels students in difficulty, verifies excused absences for medical and other reasons, and coordinates a variety of student support resources. Contact them if you are concerned about a student's well-being or would like to inquire for yourself.

### Resources for Student Support

<http://studentlife.mit.edu/wellness-and-support>

A variety of resources beyond S<sup>3</sup>, plus Q & A for students feeling under pressure. Maintained by the MIT Division of Student Life.

Violence Prevention & Response **617 253 2300** <http://studentlife.mit.edu/vpr>

### MIT Residence Housemasters

<http://studentlife.mit.edu/housing/undergraduate-housing>

If you are concerned about a student's well-being or would like to inquire for yourself., it may help to speak to the Housemaster of the dormitory.

You may be able to find the Resident Advisors of fraternities, sororities, and independent living groups through <http://studentlife.mit.edu/fsilg/about-us-0>

### ChE Tutoring in Core Subjects

By upper-level students during academic terms. Contact [che\\_tutors@mit.edu](mailto:che_tutors@mit.edu) to request a tutor.

### OME Talented Scholars Resource Room

P-Set nights (Mon - Thu, 6 - 10 pm) 16-159

<http://ome.mit.edu/programs-services/ome-tutorial-services-room>

### Resources for Learning, Time Management, Tutoring, etc.

<http://uaap.mit.edu/tutoring-support>

Maintained by the MIT Office of the First Year.

## Required Senior Survey

The senior survey will be sent out by the end of April by Melanie Charette in the Student Office. The Student Office is looking for **100%** participation and *the survey is mandatory*, so please remember to take a couple of minutes to fill this out for the department at the end of your senior year. This survey is a chance for our department to receive critical feedback from our students regarding their post-graduate placement, academic program improvements, and to measure their degree preparedness.

# 2023-2024