

FIRST YEAR

During the first year at MIT, students lay the foundation for their college education and begin to explore the many academic pathways available to them. First-year students may accommodate their individual preparation and goals by choosing among a variety of ways to complete the core subjects, explore their interests in different fields, and prepare for further undergraduate study. Incoming first-year students are referred to the First Year at MIT website (<https://firstyear.mit.edu>) for detailed information on academics, the advisory system, and support services.

To begin fulfilling the General Institute Requirements (GIRs) (<https://catalog.mit.edu/mit/undergraduate-education/general-institute-requirements>), first-year students choose subjects in mathematics, chemistry, biology, and physics to fulfill the science core, and select from a wide range of subjects in the humanities, arts, and social sciences (HASS subjects). Students have various options for satisfying the first year of the Communication Requirement.

Although student class schedules vary significantly in the first year, a typical program includes completion of most of the six science core subjects in mathematics, physics, biology, and chemistry; two of the eight HASS subjects, including a Communication-Intensive subject; and one or more subjects that help them further explore their academic interests. Students may round out their programs with electives, often including first-year advising seminars (led by the students' advisors). Some first-year students also elect to become involved in the Undergraduate Research Opportunities Program, described later in this section.

Entering students with degree credit for one or more of the science core requirements may substitute more advanced subjects or may take electives or Restricted Electives in Science and Technology (REST) Requirement subjects. Procedures for obtaining degree credit at entrance are described in the Admissions section.

Students may also enroll (space-limited) in one of the first-year learning communities: the Concourse Program, the Experimental Study Group, Design Plus, and Terrascope. These learning communities range in size from 25 to 65 students and have their own faculty, meeting places, and educational approaches. In these programs, students complete coursework comparable to that of other first-year students, but the manner in which individual Institute requirements are met varies from program to program and among students within each program. In all four programs there is an especially high level of student-faculty interaction.

Concourse Program

Concourse (<http://concourse.mit.edu>) is a small community of students and faculty dedicated to exploring the fundamental questions at the heart of all serious human inquiry. The program offers small classes with rigorous instruction in the science and

math General Institute Requirements, as well as in the humanities. In the humanities curriculum and first-year advising seminar, we raise questions and encourage debate about human nature, ethics, the proper role of science in society, and the possibilities for human well-being. Concourse students have close interactions with instructors and fellow students, and benefit from presentations by prominent guest speakers in diverse fields from MIT and elsewhere.

The program's facilities lie at the heart of the MIT campus and consist of a dedicated classroom and lounge, complete with kitchen and seminar room. Students and faculty meet frequently in the 24/7 lounge, not only for study but also for discussions, class tutorials, weekly Friday lunches, and student-led events. All Concourse students are required to sign up for the first-year advising seminar and in the fall to take at least two additional subjects within Concourse, including one humanities subject. Please see the Concourse website for more details and instructions for applying.

For more information, contact Anne McCants (amccants@mit.edu), 617-258-6669.

Design Plus

DesignPlus (<https://design.mit.edu/about/designplus>), which stands for "Design + any discipline," is a flexible, interdisciplinary learning community for first-year undergraduate students interested in learning about the design process and how to integrate design into their MIT education. Through hands-on experimentation and exploration, approximately 50 students each year acquire technical skills, mentorship, and mutual support in learning both the theory and practice of design before selecting an area of study at MIT. Based in the Morningside Academy for Design (<https://design.mit.edu>), this learning community allows students to build connections with peers and faculty through required weekly seminars and lunches as well as group discussions on general topics in student life.

Students have full-time access to a supporting makerspace (with conventional wood/metal working tools, 3D printing and modeling software, laser-cutting, and more), dedicated and passionate technical instructors, faculty mentoring, and a community of like-minded peers. Faculty, advisors, and associate advisors work with students to identify the classes within their anticipated area(s) of study and emphasize making as a critical part of the learning process. Students fulfill General Institute Requirements (GIRs) (<https://catalog.mit.edu/mit/undergraduate-education/general-institute-requirements>) by attending mainstream core subjects with other first-year students.

The DesignPlus curriculum includes:

- **DesignPlus Core:** one-hour weekly all-student lunch, each with regular programming (seminars, tours, maker activities).
- **DesignPlus Track:** one-hour weekly small group meeting with faculty and peer advisors; several design tracks are

currently offered, including product design, structures and buildings, jewelry and metal smithing, UI/UX, and global design challenges.

No previous experience in design is required—all students have the potential to be makers and designers. For more information about the program, contact Paul Pettigrew (paulpett@mit.edu), John Ochsendorf, (jao@mit.edu) or Bill McKenna (wdmc@mit.edu).

Experimental Study Group

The Experimental Study Group (ESG) (<http://esg.mit.edu>) is a close-knit academic program geared primarily toward motivated first-year undergraduate students who wish to take an active role in their MIT education. Each year 55 students, nine staff members, and approximately 40 upper-level teaching assistants (most of whom were in ESG as first years) participate in the program. Staff members are selected for their teaching ability and strong interest in community-based education and are drawn from the departments of Biology, Chemistry, Mathematics, Physics, and the School of Humanities, Arts, and Social Sciences.

In place of lectures and large classes, ESG students participate in small interactive classes (typically fewer than 12 students), discussion-based seminars, study groups, and tutorials. Almost all the core subjects in biology, chemistry, mathematics, and physics are offered through ESG, as well as HASS classes. Although ESG can be a full-time activity for first years, students may take one or two subjects and seminars outside of ESG.

ESG's small classes are structured to be active learning environments with plenty of opportunity for lively discussion, question-and-answer sessions, student presentations, and peer-led problem-solving sessions. ESG also promotes educational innovation by encouraging staff and students to design and teach experimental 3, 6, or 9-unit seminars that combine theory and practice. Past seminars include diverse offerings such as The Chemistry of Sports; Programming Physics: E&M with Python; Why Can't We Get Along; Poetry Beyond the Page; and Many Interesting Things.

ESG's centrally located facility is comprised of 14 rooms (including a central lounge and a kitchen) where classes are held and weekly activities are offered, such as luncheons and dinners, guest faculty speakers, and evening study sessions. Students and staff also plan regular outings for the first years, such as hiking trips, concerts, and visits to local museums and attractions.

For more information about ESG, contact Graham Gordon Ramsay (ramsay@mit.edu), associate director, Room 24-610, 617-258-0481, or visit the ESG website (<http://esg.mit.edu>).

Terrascope

Terrascope (<https://terrascope.mit.edu>) is a learning community in which first-year students take ownership of their education as they address complex, real-world environmental problems. Every year Terrascope explores a different global sustainability issue, with students driving the process. Students work in teams to develop solutions, drawing on diverse perspectives, interdisciplinary research, and the resources of the Terrascope community. In the process, they learn about how to organize teams around complex problems of any kind, and how to take on and manage large projects.

In the fall class, 12.000 Solving Complex Problems, students develop solutions to the year's theme problem and defend them in front of a panel of global experts in a presentation that is webcast live worldwide. In the IAP (January) class SP.361 Majors and Careers Through a Terrascope Lens, students connect with alumni from a variety of majors and career fields to learn about their career paths and choices. In the spring, two optional subjects are available to Terrascope students. In 2.00C[[J] Design for Complex Environmental Issues, students design and prototype specific technologies that address aspects of the year's problem. SP.360 Terrascope Radio fulfills a Communication Requirement (CI-H and HASS-A credit) as students produce a professional-quality radio program on an aspect of the year's Terrascope issue.

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Terrascope students are advised by faculty and staff affiliated with the program, and close interactions among first-year students, upper-level students, faculty, staff, and alumni are an important part of the Terrascope experience. Students attend weekly lunches and participate in other program activities. They can also choose to participate in a weeklong field trip over spring break to a site related to the year's work. Past locations have included the Netherlands, New Mexico, Alaska, and Iceland.

Terrascope students have 24-hour access to a variety of facilities in the center of campus, including a kitchen, lounge, and study space.

First-Year Grading

In the first term and IAP, first-year students are graded on a pass or no-record basis. They receive grades of P, D, or F in all subjects they take, where P indicates C or better performance (C- with modifier used within MIT). First-year students receive no credit for subjects with D or F grades and these subjects do not appear on their transcripts.

In the second term, first-year students are graded on an A, B, C, or no-record basis. They continue to receive no credit for subjects with

D or F grades, which do not appear on their transcripts. The A, B, or C grades are used in calculating students' term and cumulative ratings.

First-year grading is designed to ease the transition from high school by giving students time to adjust to factors like increased workloads and variations in academic preparation. Students are encouraged to improve time-management skills and develop more mature attitudes about learning. A, B, and C grades are used during the second term so that students can begin the progression to regular A–F grading in the sophomore year.

Students may choose to use P/NR grading in a total of no more than 48 units beginning with a student's second regular semester. These units may be used on any subject, including those to fulfill General Institute or Departmental Requirements. These subjects can add up to no more than 48 units, and all of the units that comprise a subject must be taken under the P/NR grading option. Subjects must be designated and the Registrar notified after final grades are submitted and before the end of the fifth week of the student's next enrolled regular term.

Use of Hidden Grades

MIT's educational policy is to provide “hidden” grades to students for educational and advising purposes only. MIT will not release hidden grades to any outside organization or individual, and these grades are never included on an external transcript. For more information on hidden grades (<https://firstyear.mit.edu/academics-exploration/credit-limits-grading>), see the First Year website.

Credit Limit for First-Year Students

MIT policy states that, in general, a first-year student may not register or receive credit for subjects totaling more than 54 units in the fall term and 60 units in the spring term. The Committee on Academic Performance (CAP) does not grant requests to exceed the credit limit. Credit earned for passing an Advanced Standing Examination will be counted toward the term credit limit unless the exam is taken either in the September or February examination period. ROTC subjects are excluded from this credit limit. Note that all MIT students are limited to 12 units during the Independent Activities Period in January.

As part of an ongoing experiment, first-year students can enroll in up to six additional units of credit designated as First-Year Discovery subjects or First-Year Advising Seminars beyond the regular credit limit. First-Year Discovery subjects are designed for discovering an interest in a new field, major, minor, or HASS concentration. Three units of 12.000 Solving Complex Problems, affiliated with the Terrascope Learning Community, and 6 units of CC.011 Concourse Seminar can also count toward the discovery-focused units.

More information on can be found on the Registrar's Office website (<https://registrar.mit.edu/experiment>).