

FIRST YEAR

During the first year at MIT, students lay the foundation for their college education. First-year students may accommodate their individual preparation and learning styles by choosing among a variety of ways to complete the core subjects and prepare for further undergraduate study. Incoming first-year students are referred to the First Year at MIT website (<http://web.mit.edu/firstyear>) for detailed information on academics, the advisory system, and support services.

To begin fulfilling the General Institute Requirements (<http://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.

A normal program for the first year includes completion of four or five of the six science core subjects in mathematics, physics, biology, and chemistry, and two of the eight HASS subjects, including a Communication-Intensive subject. 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 in one of the special learning communities: the Concourse Program, the Experimental Study Group, the Media Arts and Sciences First-Year Program, and Terrascope. These learning communities have their own faculty, meeting places, and methods of operation. In these programs, students make progress 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 Paula Cogliano (pcog@mit.edu), Room 16-129, 617-253-3200.

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 an experimental CI-H writing class which combines writing and product design, a CI-H class that teaches production of educational video, and two HASS-H philosophy subjects. 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 6-unit seminars that combine theory and practice. Seminars this past year include such diverse offerings 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 newly renovated 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>).

Media Arts and Sciences First-Year Program

The Program in Media Arts and Sciences (MAS) (<http://catalog.mit.edu/schools/architecture-planning/media-arts-sciences>) offers a special first-year program (<https://www.media.mit.edu/posts/academics-first-year-program>) emphasizing research at MIT's internationally known Media Lab. In the first-year program, instructors connect research topics in the Media Lab (<http://catalog.mit.edu/mit/research/mit-media-lab>) to core physics and chemistry subjects, and students learn firsthand how research is carried out.

The Program in Media Arts and Sciences is part of the School of Architecture and Planning. It is housed in the Media Lab, which carries on advanced research in the invention and creative use of technology to enhance communication and expression.

Up to 24 first-year students in the MAS First-Year Program are introduced to the learning-by-apprenticeship mode that characterizes MAS. During the fall term, students may choose to take part in one of several MAS first-year advising seminars, and take MAS.110 Fundamentals of Computational Media Design, with hands-on design exercises looking at the intersection between expression and technology. In the spring term they take MAS.111 Introduction to Doing Research in Media Arts and Sciences, which includes documenting and presenting research results. In conjunction with MAS.111, all students participate through the Undergraduate Research Opportunities Program (UROP) (<http://catalog.mit.edu/mit/undergraduate-education/academic-research-options/undergraduate-research-opportunities-program>) in one of the research projects at the Media Lab.

Researchers from the Media Lab teach recitation or tutorial sections in the fall for subjects 8.01 Physics I and 3.091 Introduction to Solid-State Chemistry and in the spring for 8.02 Physics II, in which they emphasize connections between the fundamentals of physics and chemistry and ongoing research at the Media Lab. Students take the lectures for these subjects, as well as lectures and recitations in other core and elective subjects, with other first-year students.

For information, please contact program director Dr. V. Michael Bove, Jr. (vmb@media.mit.edu), 617-253-0334, or visit the Media Lab website (<https://www.media.mit.edu/posts/academics-first-year-program>).

Terrascope

Terrascope (<http://web.mit.edu/terrascope>) 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 spring, two optional subjects are available to Terrascope students. In 1.016 Design for Complex Environmental Issues: Building Solutions and Communicating Ideas, 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.

Students fulfill General Institute Requirements (<http://catalog.mit.edu/mit/undergraduate-education/general-institute-requirements>) by attending mainstream core subjects with other first-year students.

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, India, 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.

Seminar XL

Seminar XL (<http://ome.mit.edu/programs-services/seminar-xlle>) is a collaborative undergraduate learning experience in which groups of three to seven students meet for 90 minutes twice per week to share their understanding of course concepts and problem-solving methods. Each group is guided by a facilitator who is a postdoctoral fellow, a graduate student, or an upper-level undergraduate student who previously earned an A in the course. Although the Office of Minority Education (OME) historically has sponsored the program for first-year students, OME encourages upper-level students to enroll as well. First-year students can receive up to three units of credit per Seminar XL class provided they attend at least 80 percent

of the group sessions, while upper-level students must register as listeners.

After the fifth week, interested students may enroll in Seminar XL Limited Edition (LE), which operates two 90-minute working group sessions per week, as does the regular Seminar XL. Past students have also stated that they benefited greatly from this academic program.

For more information about Seminar XL, Seminar XL LE, and other OME services, visit the Office of Minority Education, Room 4-107, 617-253-5010, or visit the OME website (<http://ome.mit.edu/programs-services/seminar-xl>).

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 first-year students can begin the progression to regular A–F grading in the sophomore year.

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, see the First Year website (<http://web.mit.edu/firstyear>).

Credit Limit for First-Year Students

A first-year student may not register or receive credit for subjects totaling more than 54 units in the fall term and 57 units in the spring term. The Committee on Academic Performance (CAP) rarely grants requests to exceed the credit limit. (Only in the fall term may first-year students exceed the 54-unit credit limit by 3 units to take 12.000 Solving Complex Problems or by 6 units to take Seminar XL.) 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.