Undergraduate Study

Bachelor of Science in Earth, Atmospheric, and Planetary Sciences (Course 12)
The Earth, Atmospheric, and Planetary Sciences Department offers undergraduate preparation for professional careers in a wide range of fields in geoscience (which includes geology, geophysics, geobiology, and geochemistry), atmospheric science, climate science, environmental systems, and planetary science and planetary astronomy.

The curriculum for the Bachelor of Science in Earth, Atmospheric, and Planetary Sciences (http://catalog.mit.edu/degree-charts/earth-atmospheric-planetary-sciences-course-12) ensures a fundamental background through general departmental subjects and advanced study in a concentration area chosen by the student. The student and advisor plan an appropriate and relevant selection of electives. Students are also required to take field and/or laboratory subjects, and to complete an independent research project as part of the degree requirements.

Double Major
Studies in physics, chemistry, biology, applied mathematics, and electrical or civil engineering are directly relevant preparation for work in earth, atmospheric, and planetary sciences. Students from these departments can arrange a program of study in Course 12 leading to a second major with subjects that strengthen their undergraduate program.

Five-Year Program
Students with strong academic records from the departments of Earth, Atmospheric, and Planetary Sciences, Chemistry, Physics, Mathematics, Civil and Environmental Engineering, Electrical Engineering and Computer Science, or Chemical Engineering, should be able to complete a Master of Science in Earth and Planetary Sciences, in Atmospheric Sciences, or in Ocean Sciences in one year of additional study, particularly if programs are arranged for this purpose from the beginning of the fourth year.

Applications for graduate enrollment in the department are considered any time after the beginning of the fourth year. Students may receive the Bachelor of Science as soon as the requirements are completed, or may elect to defer the award for simultaneous presentation with the Master of Science.

Minor in Earth, Atmospheric, and Planetary Sciences
The Minor in Earth, Atmospheric, and Planetary Sciences provides an opportunity to complement or expand upon one’s major by exploring in depth the natural processes that govern the structure and evolution of the Earth and planets. Areas of study include planetary surfaces, interiors, atmospheres, oceans, and biospheres. The EAPS Minor requires a solid foundation in two core subjects plus electives that create expertise in a particular area. Opportunities for field work, laboratory work, and independent study are an essential component of the minor.

Core Subjects
Select two of the following: 24
- 12.001 Introduction to Geology
- 12.002 Introduction to Geophysics and Planetary Science
- 12.003 Introduction to Atmosphere, Ocean, and Climate Dynamics
- 12.007 Geobiology: History of Life on Earth
Select one of the following: 12
- 5.60 Thermodynamics and Kinetics
- 18.03 Differential Equations ¹

Restricted Electives
Select at least 24 units in Course 12 subjects, approved by the minor advisor, to provide a depth of understanding and expertise in an EAPS discipline.
Select an option from either the Laboratory or Independent Study group: 12-15

Laboratory
- 12.115 Field Geology
- 12.119 Harnessing Power from Environmental Microbes and Chemical Gradients
- 12.307 Weather and Climate Laboratory
- 12.335 Experimental Atmospheric Chemistry
- 12.410[J] Observational Techniques of Optical Astronomy

Independent Study
- 12.IND Independent Study
- 12.UR Undergraduate Research

Total Units 72-75

¹ 18.032 Differential Equations is also an acceptable option.

Minor in Astronomy
The Earth, Atmospheric, and Planetary Sciences Department jointly offers a Minor in Astronomy (http://catalog.mit.edu/interdisciplinary/undergraduate-programs/minors/astronomy) with the Department of Physics (Course 8). A detailed description and list of requirements for this minor is available under Interdisciplinary Programs.

Minor in Atmospheric Chemistry
The department also offers an interdisciplinary Minor in Atmospheric Chemistry (http://catalog.mit.edu/interdisciplinary/undergraduate-
programs/minors/atmospheric-chemistry) with the Departments of Chemistry and Civil and Environmental Engineering. For a description of the minor, see Interdisciplinary Programs.

Inquiries
Additional information may be obtained from the department’s Education Office, Room 54-912, 617-253-3381.