Environmental Science

To build an understanding of the intricate connections between humanity and the environment, including the contemporary challenges posed by climate change, an understanding of the interdependencies of environmental and biological systems is required. This approach is deeply informed by the study of historical environmental shifts: the emergence of life alongside the Great Oxygenation Event, climate fluctuations spurred by super volcanoes and silicate weathering during the ages of dinosaurs and mammals, and the transformation of ocean currents and human migration patterns due to melting ice sheets. Studies connecting today's environmental changes with policy decisions build connections between science and society. By integrating past phenomena with current environmental dynamics, the curriculum provides a rich context for devising strategies to address the impact of modern changes, thereby equipping students to make informed decisions for a sustainable future.

Where will your curiosity take you?

Learn how a major in Course 12 can help you build quantitative and analytical skills that will be important to your career after earning your degree at MIT.

» *eaps.mit.edu*

Course 12

EAPS Education Office 54-912 | 617-253-3381

Course 12 Major Requirements

[144-150 UNITS IN MAJOR]

INTRODUCTORY SUBJECTS

CHOOSE 36 UNITS

12.001	Introduction to Geology
12.002	Introduction to Geophysics and Planetary Science
12.003	Introduction to Atmosphere, Ocean, and Climate Dynamics
12.004	Introduction to Chemistry of Habitable Environments

PLUS

6 UNITS
AT LEAST 6 UNITS

12.TIP	Thesis Preparation
12.THU	Undergraduate Thesis *(at least 6 units, CI-M)*

LAB + FIELD

CHOOSE 12-15 UNITS

All are CI-M subjects.

12.115 + 12.116	Field Geology + Analysis of Geologic Data
12.307	Weather and Climate Laboratory
12.335	Experimental Atmospheric Chemistry
12.410J	Observational Techniques of Optical Astronomy

COMPUTATION

CHOOSE 12 UNITS

12.010	Computational Methods of Scientific Programming
12.012	MatLab, Statistics, Regression, Signal Processing
12.C25J	Real World Computation with Julia
6.100A	Introduction to Computer Science Programming in Python
PLUS 6.100B	Intro. to Computational Thinking and Data Science
-OR- 16.C20J	Intro. to Computational Science and Engineering

CONCENTRATION: ENVIRONMENTAL SCIENCE

CHOOSE 36-39 UNITS

12.006J	Nonlinear Dynamics: Chaos
12.007	Geobiology: History of Life on Earth
12.031J	Fundamentals of Ecology
12.086	Modeling Environmental Complexity
12.100	Plate Tectonics and Climate
12.104	Geochemistry of Natural Waters
12.110A+B	Sedimentary Environments; Sedimentology in the Field
12.163	Geomorphology
12.177	Astrobiology: Origins and Early Evolution of Life
12.301	Climate Science
12.348J	Global Climate Change: Economics, Science, and Policy
12.349	Mechanisms and Models of the Global Carbon Cycle
12.373	Field Oceanography
12.377	History of Earth's Climate
12.384J	Living Dangerously: Environmental Problems from 1900 to Today
12.385	Science, Politics and Environmental Policy
12.386J	Environment and History
12.387J	People and the Planet: Environmental Governance and Science
12.421	Physical Principles of Remote Sensing

SUPPORTING SUBJECTS

CHOOSE 36 UNITS

RECOMMENDED FOR THIS CONCENTRATION

5.12	Organic Chemistry
6.8711J	Computational Systems Biology: Deep Learning in the Life Sciences
8.03	Physics III
18.03 -OR- 18.06	Differential Equations -OR- Linear Algebra

For a complete list of supporting subjects, please visit » ***catalog.mit.edu***