

ABOUT DEES

The Department of Earth and Environmental Sciences (DEES) hosts one of the top-rated earth and environmental science programs internationally. Faculty from all over the world bring their expertise and knowledge to our classrooms preparing students to take on the current challenges facing earth and humanity. The program provides an understanding of the natural functioning of our planet and considers the consequences of human interactions with it. It is designed to instill a comprehension of how the complex earth systems work, at a level that will encourage students to think creatively about how to address multidisciplinary environmental problems.

With climate change rapidly reshaping the earth, it has never been a more crucial time to train the next generation of scientists in the earth and environmental science fields. Students will graduate with a degree that readies them to think critically and tackle the problems of Earth's unpredictable future.

The breadth of material covered in the program provides an excellent background for students to continue on to careers in various fields or graduate school in the earth and environmental sciences. The skills developed in the program can open up many career paths such as law, business, environmental consulting, research, public policy, teaching, and journalism.



Field trip to the Newark Basin



Field trip to Death Valley, California



Field trip to Greenbush, Maine

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Department of
Earth & Environmental
Sciences

Columbia University

COURSE LIST

Dinosaurs & the History of Life
Global Warming for Global Leaders
Death Valley Field Excursion
Earth: Origin, Evolution, Processes, Future
Oceanography
Environmental Risks & Disasters
Earth's Resources & Sustainable Development
Science for Sustainable Development
Earth's Environmental Systems: The Climate System
Earth's Environmental Systems: The Solid Earth System
Earth's Environmental Systems: The Life System
Field Geology (Italy/Barbados)
Geochemistry for a Habitable Planet
Climate Physics
Climate Biogeochemistry
Climate Extremes
Solid Earth Dynamics
Computational Earth Science
Introduction to Atmospheric Science
Chemical Geology
Humans and the Carbon Cycle
Climate Thermodynamics/Energy Transfer
Global Assessment-Remote Sensing
Geodynamics
Geochronology & Thermochemistry
Intro to Mineralogy
Geophysical Fluid Dynamics
Glaciology
Sedimentary Geology
Crustal Deformation
Sea Level Change
Earth's Deep Interior
Terrestrial Paleoclimate
Paleobiology & Earth's System History
Biogeochemistry
Plant Ecophysiology
Air-Sea Interaction
Intro to Igneous Petrology
Wetlands & Climate Change
Chemistry of Continental Waters
Isotope Geology I
Stable Isotope Geochemistry
Earth-Human Interactions
Paleoceanography
Biological Oceanography
Intro to Atmospheric Chemistry
Physical Oceanography
Chemical Oceanography
Ocean Dispersion & Mixing
Earth's Oceans & Atmosphere
Cenozoic Paleoceanography
Plate Tectonics
Intro to Seismology



Field trip to Fire Island, New York

MAJORS & CONCENTRATIONS

The **Earth Science** major provides an in-depth study of the solid and fluid Earth, its history, and ancient and modern geological processes

The **Environmental Science** major focuses on the interaction between Earth's physical environment and the biosphere, anthropogenic processes like pollution and global climate change, and environmental remediation.

The **concentrations** in Earth and Environmental Science are designed to give students deeper knowledge of these fields than that provided by introductory courses.

FIELD TRIPS

The department hosts field trips to bring lessons from the classroom to the outdoors. We have a field-geology course for majors offered annually, typically in Italy or Barbados. We also offer trips to California's Death Valley and other destinations for first and second-year students. Our student-ran undergraduate club also plans various events such as a Central Park Geology trip and overnight camping trips.



RESEARCH

The Department of Earth and Environmental Sciences shares staff and facilities with Columbia University's world renowned research institution, the Lamont-Doherty Earth Observatory. Since its founding in 1949, Lamont has been a leader in the earth sciences.

The Department is also affiliated with the NASA Goddard Institute for Space Studies (GISS) and the American Museum of Natural History (AMNH).

Undergraduate students can participate in research alongside professors and graduate students at Lamont, NASA GISS, and AMNH.



Field trip to Iceland