EARTH AND ATMOSPHERIC UNDERGRADUATE DEGREE PROGRAM

Study of the Earth and atmospheric sciences (EAS) has never been more critical to society than it is today. By analyzing the complex relationships between the ocean, solid earth, atmosphere, and biosphere, students can help meet society’s growing demand for energy, minerals, and clean water, as well as contribute to mitigating the negative impacts of global climate change and natural hazards, which threaten our increasingly concentrated populations and complex infrastructure with disaster on unprecedented scales.

The Department of Earth and Atmospheric Sciences is a global leader in research directed toward understanding the fundamental processes that have shaped our planet. The EAS major provides Cornell students with the earth literacy needed to be informed citizens and wise stewards of the Earth. EAS faculty members and graduate students carry out frontier research on both basic and applied aspects of subjects as diverse as satellite monitoring of volcanic activity; active tectonics; the deep structure of volcanoes, East African Rift, and the Andes Mountains; natural and man-made earthquakes; the nature of the Earth’s ionosphere; controls on global climate; and improved weather prediction.

The (EAS) major is available to students in the Colleges of Engineering, Arts and Sciences, and Agriculture and Life Sciences. Students in this program can pursue education and research that prepare them to compete for careers or graduate study at leading institutions in this country and abroad. You may choose to focus on one of a number of disciplinary specialties, such as geophysics or biogeochemistry, or to develop the broad expertise needed to understand the interactions between the diverse elements of Earth and life in the past, present, and future.

The EAS program is intrinsically interdisciplinary, involving many branches of science and engineering. It incorporates the fundamentals of Earth Science with the emergence of a new and more complete approach that encompasses all components of the earth system—air, life, rock, and water—to gain a comprehensive understanding of the world as we know it. It draws on the expertise of several of Cornell Engineering’s schools and departments, including civil and environmental engineering, biological and environmental engineering, mechanical and aerospace engineering, and electrical and computer engineering.

Hands-on work is an inherent part of how students achieve complete understanding of the issues raised through the coursework. There are many opportunities for students to engage in geological, oceanographic, and meteorological research in the field, and for national and international travel as well as paid research experiences. EAS students have worked with faculty members in the Andes, the Aleutian Islands, the Rocky Mountains, the Atacama Desert, the Caribbean, Tibet, and Hawaii. Some have conducted research while sailing aboard a research vessel with SEA Semester. Students are also able to probe the ionosphere of Earth and the surface of Mars using remote sensing techniques.

---

EAS REQUIRED COURSES

Choice of Three:

- EAS 3010 Evolution of the Earth System
- EAS 3030 Introduction to Biogeochemistry
- EAS 3040 Interior of the Earth
- EAS 3050 Climate Dynamics
The EAS major provides a strong preparation for graduate school in any one of the earth sciences, such as atmospheric sciences, geologic sciences, geophysics, geochemistry, oceanography, hydrology, biogeochemistry, and environmental geoscience. Students seeking employment with the degree will have many options in a wide variety of careers related to energy, the environment, and critical resources in both the private sector and government. The energy industry, to cite one example, is entering a demographic turnover that will result in large numbers of high paying positions in the near future. Students with the strong science background provided by the EAS major are also highly valued by graduate programs in environmental law, public affairs, economics, and public policy.

EAS SAMPLE ELECTIVE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAS 1101</td>
<td>Climate and Energy: a 21st-Century Earth Science Perspective</td>
</tr>
<tr>
<td>EAS 1220</td>
<td>Earthquake!</td>
</tr>
<tr>
<td>EAS 1540</td>
<td>Introductory Oceanography</td>
</tr>
<tr>
<td>EAS 1700</td>
<td>Evolution of the Earth and Life</td>
</tr>
<tr>
<td>EAS 2680</td>
<td>Climate and Global Warming</td>
</tr>
<tr>
<td>EAS 4010</td>
<td>Fundamentals of Energy and Mineral Resources</td>
</tr>
<tr>
<td>EAS 4040</td>
<td>Geodynamics</td>
</tr>
<tr>
<td>EAS 4050</td>
<td>Active Tectonics</td>
</tr>
<tr>
<td>EAS 4260</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>EAS 4470</td>
<td>Physical Meteorology</td>
</tr>
<tr>
<td>EAS 4620</td>
<td>Marine Ecosystem Sustainability</td>
</tr>
<tr>
<td>EAS 4790</td>
<td>Paleobiology</td>
</tr>
</tbody>
</table>

EAS By the Numbers

Starting salaries of B.S. Earth and Atmospheric Sciences graduates (3-year average)
- Median: $40,669

Earth and Atmospheric Sciences undergraduate students: 47
- College of Agriculture and Life Sciences: 27
- College of Arts and Sciences: 10
- College of Engineering: 10

Geological Sciences graduate students: 37

CAREER OPPORTUNITIES
- environmental engineering and policy
- geoenergy
- groundwater conservation
- meteorology
- natural hazards
- oceanography
- climate change modeling
- research in academe, government, or industry
- science education

CONCENTRATIONS
All EAS students must select an area of interest in which to concentrate. Standard concentrations include: atmospheric sciences; environmental geoscience; geological sciences; and ocean sciences.

Students may also create their own concentration by working closely with a faculty advisor.