Study of the Earth Sciences has never been more critical to society than it is today. Global climate change, dwindling energy resources, inadequate water supplies, and political strife over strategic minerals are global problems that are becoming more and more acute, while volcanic eruptions, earthquakes, tsunamis, and hurricanes threaten our increasingly concentrated populations and complex infrastructure with disaster on unprecedented scales.

The Department of Earth and Atmospheric Sciences (EAS) at Cornell is a global leader in research directed toward understanding the fundamental processes that have shaped our planet. EAS is committed to providing Cornell students with the earth literacy needed to serve as 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, the deep structure and evolution of the Andes Mountains and Tibetan Plateau, the nature of the Earth’s ionosphere, ocean acoustics, controls on global climate, and improved weather prediction.

The Science of Earth Systems major (SES) is the undergraduate program offered by EAS to Cornell 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. Students may choose to focus on one of a number of disciplinary specialties, such as geophysics or tectonics, 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.

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, rising sea levels, natural hazards, and decreasing biodiversity.

The SES 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 new and more 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.

To achieve complete understanding of the issues raised in the SES program, students need to adopt a hands-on approach. 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. SES 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 spent a semester at sea in the Woods Hole Ocean Studies Program. Students are also able to probe the ionosphere of Earth and

**EAS Core 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 surface of Mars using remote sensing techniques.

The SES 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, and biogeochemistry. Students seeking employment with the degree will have many options in a wide variety of careers related to 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 SES major are also highly valued by graduate programs in environmental law, public affairs, economics, and public policy.

EAS By the Numbers

Starting salaries of B.S. Science of Earth Systems graduates
Median $40,669

Science of Earth Systems undergraduate students 38
College of Agriculture and Life Sciences 22
College of Arts and Sciences 9
College of Engineering 7

Geological Sciences graduate students 32

MASTER OF ENGINEERING DEGREE PROGRAM

The one-year Master of Engineering (M.Eng.) Program in Geological Sciences provides future professional geoscientists or engineers with the geoscience and engineering background they will need to analyze and solve engineering problems that involve earth system variables and concepts. Individual programs are developed within three established options: Geohydrology, Environmental Geophysics, and Ocean Science and Technology (joint program with the Woods Hole Oceanographic Institution).

Please visit the following website for more details: www.engineering.cornell.edu/meng

www.eas.cornell.edu