

EARTH SCIENCE AND POLICY, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

Global climate change and environmental change on a more local scale present major challenges for our future. The solution to these problems requires people with a solid scientific understanding of natural earth/environmental systems, and also an understanding of the social, economic, and political dimensions of these problems. This major is intended to bridge the gap between the physical, natural sciences (the Earth sciences) and the social sciences, with the understanding that intelligent, effective solutions to environmental problems will require people who grasp the scientific and social dimensions of environmental problems. This major is intended to produce graduates who not only grasp these problems, but who can also apply a wide array of quantitative tools and fundamental principles to generate practical solutions.

Students develop a sense of community through a set of common upper level courses and they gain practical experience through a mandatory internship course. A variety of options are offered to enable greater depth of study in aspects of science and policy related to water and land use, climate change, and energy; a general option is also available.

This major will provide an excellent preparation for careers in environmental law, environmental consulting, and nonprofit organizations engaged in the science and policy of environmental issues. This major will also serve as a strong basis for postgraduate studies in environmental science and policy.

Water and Land Use Option

This option is intended to develop a focus on the role of water and land in environmental issues, encompassing scientific, economic, and policy dimensions of groundwater and surface water resources and of land use. The Water and Land Use option is appropriate both for students who intend to pursue postgraduate degrees and for students who want to enter the workforce.

Climate Change Option

This option is intended for students who want to focus on the science and policy related to climate change, including the scientific basis for identifying, understanding, and potentially mitigating climate change. The option also develops a basis for understanding the economic costs and risks related to climate change, as well as the political dimensions. This option is appropriate both for students who intend to pursue postgraduate degrees and for students who want to enter the work force.

Energy Option

This option is designed to provide a focus on aspects of Earth science and policy related to energy, including the origins of energy and mineral resources, the future of these resources, and the alternatives for meeting future needs. This option also provides a focus on the economics of energy systems and the political dimensions of the challenges related to our energy future. The Energy option is appropriate both for students who intend to pursue postgraduate degrees and for students who want to enter the work force.

General Option

This option is intended for students who desire a broad sampling of Earth science as it relates to policy or those who desire to design their own focus within Earth science in consultation with an academic adviser. The General option is appropriate both for students who intend to pursue postgraduate degrees and for students who want to enter the work force.

What is Earth Science and Policy?

The Earth Science and Policy program is designed to help train students to address big picture questions—like how to prepare for climate change and how to solve issues affecting communities, such as maintaining sources of clean water and reliable energy. The program is designed to help students develop a more detailed understanding of how scientists from a range of Earth science disciplines—including meteorology, geosciences, and geography—collaborate with government and industry representatives on legislation that can have an impact on local communities, the nation, and the world. The program is ideal for students who want to apply their knowledge of the sciences to help create solutions for pressing problems facing society.

You Might Like This Program If...

- You like to work as part of a team to create solutions.
- You want to address important Earth science-related challenges such as climate change, clean energy, and water resources.
- You are interested in how humans interact with the natural world.
- You like to study about the Earth and its physical and chemical processes.
- You would like to build a solid scientific background to engage in informed discussions about some of the world's most pressing concerns.