

# CLIMATOLOGY, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

## Program Description

Climate is a central component of the physical environment, playing an important role in a wide range of human activities. The ability to force changes in the global climate system may be one of the more significant ways in which human society will impact Earth's physical environment in the near future. The Climatology minor in the College of Earth and Mineral Sciences is an interdisciplinary program drawing from the fields of meteorology, geography, and geosciences. The minor provides an overview of the physical processes that control present-day climate. It also provides an introduction to the history of climate change through geologic time, and presents some of the causes and consequences of potential future climate change and variability.

## What is Climatology?

Climatology is an integrative science focusing on interactions between energy and mass flows among the atmosphere, hydrosphere, lithosphere, biosphere, and cryosphere and on the increasing impact of human activities—both inadvertent and intentional—on climate from local through regional to global scales. Drawing from meteorology and atmospheric sciences, geography, and geosciences, climatologists investigate the physical and chemical feedbacks involved in climate stability, the relationships between spatial and temporal scales in climate, and the physical processes associated with inter-annual climate variations. Climatologists use field experiments, remote sensing data, online observation archives, GIS analysis, and computer modeling to understand the physical processes and spatial and temporal patterns of climate systems, climate variability and change, and climate impacts.

## You Might Like This Program If...

- You want to understand what is special about the physical climate processes happening in a given location.
- You are interested in how the climate processes of a place relate to those of others in the region.
- You want to learn how energy and mass flow into and out of a region.
- You want to find out if biophysical processes change with spatial scales.
- You want to study how people influence climate processes and vice versa.

## Program Requirements

Requirement	Credits
Requirements for the Minor	18

## Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/>). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
<b>Additional Courses</b>		
<i>Additional Courses: Require a grade of C or better</i>		
Select 18 credits of the following:		18
EARTH 103N	Earth in the Future: Predicting Climate Change and Its Impacts Over the Next Century	
GEOG 310	Introduction to Global Climatic Systems	
GEOG 412		
GEOG 417	Satellite Climatology	
GEOG 438W	Human Dimensions of a Changing Climate	
GEOSC 320	Geology of Climate Change	
METEO 300	Fundamentals of Atmospheric Science	

## Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

## University Park

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## Career Paths

Students enrolled in the Climatology minor learn a wide range of research and analytical skills that are highly valued by employers. Students trained in climatology find jobs in all levels of government, nonprofit organizations, and in industry.

## Careers

Students graduating with the Climatology minor are well positioned to find employment with diverse organizations spanning business, government, and nonprofit sectors. Such organizations may include (but are not limited to): AccuWeather; Federal Emergency Management Agency; NASA; National Center for Atmospheric Research; National Oceanic and Atmospheric Administration; Resources for the Future; SAIC; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency; U.S. Geological Survey; local, regional, and state agencies; environmental and engineering consulting firms; policy research institutes; and private corporations.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A MINOR IN CLIMATOLOGY (<https://www.geog.psu.edu>)

## **Opportunities for Graduate Studies**

The Climatology minor is useful for students who are interested in pursuing graduate degrees in the environmental, atmospheric, and social sciences. Alumni enter graduate and professional studies in a variety of programs, including (but not limited to) geography, environmental sciences, atmospheric sciences, public policy, emergency management, and law. They sometimes begin graduate or professional programs directly after finishing undergraduate studies, but often get several years' work experience before returning to school, either full or part-time.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<https://www.geog.psu.edu>)

## **Contact**

### **University Park**

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