

CLIMATE CHANGE, CERTIFICATE

Climate change represents one of the most controversial and least understood threats to human, economic and environmental well-being on a global scale. The study of climate change offers an opportunity to develop the skills and effective policies to reduce risk and better adapt to a changing environment. In this 4-course, 4 c.u. certificate you gain an understanding of the Earth's climate system and how and why it has changed over time. Within the disciplines of oceanic and atmospheric science, you focus on the mechanisms that drive climate change, both natural and the result of human actions. You also develop the communication skills to more effectively share an understanding of climate change and its relevant policy implications with a broad audience.

Climate Change Certificate Requirements

- The Certificate in Climate Change is a 4-course, 4 c.u. credit program of study taught by University of Pennsylvania faculty.
- To earn a certificate, students complete any four courses offered, in any order. See courses below.

Flexible Course Schedule

Penn LPS Online courses in the Certificate in Climate Change are offered on an accelerated (8-week) schedule. Courses in the online certificate program are largely asynchronous with some optional synchronous sessions to be scheduled by the instructors. All Penn LPS Online courses are taught at the undergraduate level by Penn instructors.

You have the option to enroll in individual climate change courses without committing to the entire online certificate, enjoying the flexibility and expertise offered by Penn LPS Online to suit your schedule and interests.

Read more about the Certificate in Climate Change. (<https://lpsonline.sas.upenn.edu/academics/certificates/climate-change/>)

The Certificate in Climate Change prepares you to:

- Reconstruct the history and scales of climate changes
- Learn basic atmospheric and ocean dynamics to understand fundamental climatic processes and future changes
- Examine the mechanisms that act to drive climate change
- Analyze long-term natural climate variability on a global and regional scale
- Understand the importance of natural environmental change as a benchmark against which to assess human impacts, recent climate change, and future environmental change
- Deepen insights into methods of scientific inquiry
- Refine communication skills to effectively share an understanding of climate change, with a focus on both science and policy implications

Curriculum

Students must complete CLCH 1600: Oceanography plus any three additional climate change courses from the list below to earn a Certificate in Climate Change. Although it is recommended that students take CLCH 1600: Oceanography first, students can start with any course and take them in any order.

Code	Title	Course Units
Climate Change Certificate		
CLCH 1600	Oceanography	1
Select 3 CU from the following:		3
CLCH 2100	Introduction to Disaster Management	
CLCH 2200	Atmospheric Science	
CLCH 2300	Climate Change	
CLCH 3000	Communicating Science	
CLCH 3100	Global Environmental Issues	
Any course with Attribute = BCCC (http://catalog.upenn.edu/attributes/bccc/)		
Total Course Units		4

Courses are subject to change.

Advanced Certificate

Certificate students who complete any four of the online courses listed below earn a Certificate in Climate Change. Those students are then eligible to pursue an Advanced Certificate in Climate Change by taking two additional Climate Change courses.

Code	Title	Course Units
Climate Change Certificate		
Select two of the following not used for the Basic Climate Change Certificate		2
CLCH 1600	Oceanography	
CLCH 2100	Introduction to Disaster Management	
CLCH 2200	Atmospheric Science	
CLCH 2300	Climate Change	
CLCH 3000	Communicating Science	
CLCH 3100	Global Environmental Issues	
Any course with Attribute = BCCC (http://catalog.upenn.edu/attributes/bccc/)		
Total Course Units		2

Courses are subject to change.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.