

# Undergraduate Certificate in Climate and Climate Change

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- Demonstrate sub-disciplinary/thematic depth of training and comprehension.

Climate Change is an increasingly important societal issue since it will impact how we secure water, energy, and food in the near future. The primary cause of current trends in global climate are emissions of carbon dioxide and other greenhouse gasses into the atmosphere since the start of the Industrial Revolution and the rise of fossil fuels as primary energy sources. In 2013 the Intergovernment Panel on Climate Change concluded that "the human influence on the climate system is clear. This is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system."

The potential impacts from a changing climate are widespread and range from a rise in global sea level as ocean waters are heated and ice stored on land is transferred to the oceans at increasing rates; increasing surface temperatures; more widespread drought events of longer duration; and the possibility of more frequent and more intense hurricanes making landfall in the region surrounding the Gulf of Mexico. To cope with these consequences, and to build a more resilient society and infrastructure, there is an urgent need for an informed citizenry. It is critical to educate future decision makers who can influence national and international policies and adopt a more rational approach to dealing with impacts of climate change.

## General requirements:

Students must maintain a 2.0 GPA in courses taken in the certificate program and maintain good standing in any University program of study for which they are enrolled. Students are encouraged to meet with the certificate Director to discuss progress in the program.

Code	Title	Hours
<b>Core Courses</b>		
ATMO/GEOG 321	Climate and Climate Change	3
GEOG 371	Environmental Geopolitics	3
<b>Elective Courses</b>		<b>6-7</b>
ATMO 521	Microclimatology	
ATMO 634	Physical Climatology	
ATMO 680	Physical Meteorology	
GEOG 332	Glaciers and Landscape	
GEOG 336	Introduction to Environmental Hydrology and Water Resources	
GEOG 372	Environmental Policy	
GEOG 526	Remote Sensing of Environment I	
GEOG 556	Geography of the Energy Crisis	
GEOG 577	Human Dimensions of Global Change	
<b>Total Hours</b>		<b>12-13</b>

At the completion of this program, students will be able to:

- Analyze geographically based issues using approaches and tools appropriate to the problem.