

# CERTIFICATE IN CLIMATE CHANGE CAUSES, IMPACTS, AND SOLUTIONS

The Climate Change Causes, Impacts and Solutions Certificate currently is a 13-22 unit certificate program offering undergraduate and graduate students the opportunity for a deeper exploration of the causes, impacts, solutions, and social justice aspects of climate change. There are 5 core required courses. Students complete a foundational course, plus one course each in causes, impacts, and solutions. One of the causes, impacts, or solutions courses must be designated as Advanced Climate Justice. At least two-thirds of the units taken by the student must be at the upper-division level. The Certificate serves both matriculated and non matriculated students. Non matriculated students include community members, for instance members from a wide range of professions including, but not limited to green energy, government, transportation, recreation, tourism, community planning, law, health, journalism, and real estate could benefit from additional training about climate change causes, impacts and solutions.

## Program Learning Outcomes

- Explain and analyze the natural, social, economic, and/or political causes of anthropogenic climate change.
- Identify the natural, social, economic, and/or political impacts of anthropogenic climate change.
- Identify solutions to anthropogenic climate change and demonstrate the ability to translate knowledge into action.
- Critically analyze and identify examples of the relationship between anthropogenic climate change and social justice.
- Apply evolving understanding of climate change causes, impacts and solutions towards real-world action.

## Certificate in Climate Change Causes, Impacts, and Solutions – 13-22 units

Courses may be listed in multiple areas. **Courses cannot be double-counted and each course can only fulfill one requirement area.** Students should meet with a Climate Change Certificate advisor to determine which courses in other areas should be selected if a course satisfies multiple areas

### Foundational Course (3-4 units)

Select One:

Code	Title	Units
BIOL 318	Our Endangered Planet	3
ENVS 130	Environmental Studies	3
ERTH 335	Global Warming	3
GEOG 160	Introduction to Environmental Science	4
RRS 276	Race, Activism and Climate Justice	3
WGS 578	Women, Globalization, and Ecology	3

### Causes Course (3-4 units)

Select One:

Code	Title	Units
BIOL 161	Climate Change and the Oceans	3
BIOL 300	Nature Study	3
BIOL/ERTH 577	Climate and Ecological Interactions	4
BIOL 617	Environmental Physiology	3
BUS 450	Greening of Business	3
CHEM 380	Chemistry Behind Environmental Pollution	3
COMM 572	Communication and Environmental Justice	4
ENVS 130	Environmental Studies	3
ENVS 460	Energy, Justice, and Sustainability	3
ERTH 260	Physical Processes in the Atmosphere	4
ERTH 335	Global Warming	3
ERTH 365	Extreme Weather in a Warming World	3
ERTH 535	Planetary Climate Change	4
GEOG 101	Our Physical Environment	3
GEOG 160	Introduction to Environmental Science	4
GEOG 314	Bioclimatology	4
GEOG 435	Geography of Global Transportation	4
GEOG 500GW	Physical and Human Dimensions of Climate Change - GEAR	3
GEOG 666	Geography of Garbage: Recycling and Waste Reduction	3
I R/GEOG 428	International Political Economy of Food and Hunger	4
I R 735	Seminar in Global Environmental Policy	3
LS 401	International Development and Resource Justice	3
PLSI 354	Politics, the Environment, and Social Change	4
RRS 276	Race, Activism and Climate Justice	3
USP 514	Sustainable Development in Cities	4
WGS 593	Gender, Health, and the Environment	3

### Impacts Course (3-4 units)

Select One:

Code	Title	Units
AA S 587	Asian Americans and Environmental Justice	3
BECA 502	Environmental Communication on Electronic Media	3
BIOL 161	Climate Change and the Oceans	3
BIOL 300	Nature Study	3
BIOL 617	Environmental Physiology	3
BUS 450	Greening of Business	3
ENVS 470	Climate Politics and Policy	3
ENVS 480	Climate Change Adaptation and Justice	3
ERTH 260	Physical Processes in the Atmosphere	4
ERTH 330	California Water	3
ERTH 335	Global Warming	3
ERTH 365	Extreme Weather in a Warming World	3
GEOG 314	Bioclimatology	4
GEOG 500GW	Physical and Human Dimensions of Climate Change - GEAR	3
I R/GEOG 428	International Political Economy of Food and Hunger	4
RRS 276	Race, Activism and Climate Justice	3

USP 514	Sustainable Development in Cities	4
WGS 593	Gender, Health, and the Environment	3

**Solutions Course (3-6 units)**

Select One:

Code	Title	Units
BECA 502	Environmental Communication on Electronic Media	3
BIOL 532	Restoration Ecology	3
BIOL 534	Wetland Ecology	4
BIOL 671	Ecology and Evolution of Marine Systems II	6
BUS 450	Greening of Business	3
COMM 572	Communication and Environmental Justice	4
COMM/ENVS 675	Climate Ambassadors Practicum	4
ENVS 460	Energy, Justice, and Sustainability	3
ENVS 470	Climate Politics and Policy	3
ENVS 480	Climate Change Adaptation and Justice	3
ENVS 530	Environmental Leadership and Organizing	3
ENVS 570	Applied Local Sustainability	3
FIN 651	Student Managed Fund in Environmental, Social and Governance (ESG) Investments	3
GEOG 314	Bioclimatology	4
GEOG 433	Urban Transportation	4
GEOG 435	Geography of Global Transportation	4
GEOG 500GW	Physical and Human Dimensions of Climate Change - GVAR	3
GEOG 666	Geography of Garbage: Recycling and Waste Reduction	3
I R/GEOG 428	International Political Economy of Food and Hunger	4
I R 735	Seminar in Global Environmental Policy	3
LS 430	Future of the Forests	3
RRS 276	Race, Activism and Climate Justice	3
USP 515	Environmental Justice: Race, Poverty, and the Environment	4
WGS 578	Women, Globalization, and Ecology	3

**Applied Component Course (1-4 units)**

Select One:

Code	Title	Units
BIOL 681	Climate Action: Applied Learning for Real World Change	1
COMM/ENVS 675	Climate Ambassadors Practicum	4

**Advanced Climate Justice**

At least one of the courses taken to fulfill the Causes, Impacts, or Solutions area must also be an Advanced Climate Justice course. Courses designated as fulfilling Advanced Climate Justice are listed below:

Code	Title	Units
AA S 587	Asian Americans and Environmental Justice	3
BECA 502	Environmental Communication on Electronic Media	3

BIOL 534	Wetland Ecology	4
BIOL 671	Ecology and Evolution of Marine Systems II	6
BIOL 681	Climate Action: Applied Learning for Real World Change	1
COMM 572	Communication and Environmental Justice	4
COMM/ENVS 675	Climate Ambassadors Practicum	4
ENVS 460	Energy, Justice, and Sustainability	3
ENVS 470	Climate Politics and Policy	3
ENVS 480	Climate Change Adaptation and Justice	3
ENVS 530	Environmental Leadership and Organizing	3
ENVS 570	Applied Local Sustainability	3
GEOG 433	Urban Transportation	4
GEOG 435	Geography of Global Transportation	4
GEOG 500GW	Physical and Human Dimensions of Climate Change - GVAR	3
GEOG 666	Geography of Garbage: Recycling and Waste Reduction	3
I R/GEOG 428	International Political Economy of Food and Hunger	4
I R 735	Seminar in Global Environmental Policy	3
LS 401	International Development and Resource Justice	3
LS 430	Future of the Forests	3
RRS 276	Race, Activism and Climate Justice	3
USP 514	Sustainable Development in Cities	4
USP 515	Environmental Justice: Race, Poverty, and the Environment	4
WGS 578	Women, Globalization, and Ecology	3
WGS 593	Gender, Health, and the Environment	3