

CLIMATE SCIENCE AND SOLUTIONS CERTIFICATE

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This Certificate provides students with a foundation in basic climate science, anthropogenic climate change, and solutions, so they can be effective and informed leaders in all walks of life in the decades to come. In our lifetimes, the combined effects of climatic and environmental change will profoundly and pervasively alter the planet and the lives of all of us. In this day and age, effective leaders cannot afford to be ignorant of climate change and the many possible ways to mitigate it and its effects. Climate change is one of humanity's grand challenges and the goal of this Certificate is to prepare students to meet this challenge wherever their paths might lead.

REQUIREMENTS

Students must successfully complete six course credits. Three of the required courses must represent three different pillars of thought, each designed to provide the fundamentals, vocabulary, and interdisciplinary scope to engage in integrative conversations, collaborations, and endeavors on climate change and solutions. The three pillars of thought are: basic climate science; the science and impacts of anthropogenic climate change; and climate solutions.

From the first pillar, basic climate science, students gain an understanding of the components, processes, and feedbacks of the climate system, including an overview of ocean–atmosphere dynamics, the carbon cycle, atmospheric gases and their effects, radiative balance, and spatial and temporal climate variability.

From the second pillar, the science and impacts of anthropogenic climate change, students learn about drivers and projections for anthropogenic climate change, the feedbacks and uncertainties in regional to global climate models, regional to global climate change impacts, mitigation, and adaptation, and the interaction between climate and other aspects of global societal and environmental change.

From the third pillar, climate solutions, students learn about climate solutions, including the scientific, technological, and socio-political aspects of natural and technological solutions and strategies.

One of the remaining 3 courses needs to be designated as a seminar on climate science and solutions as approved by the certificate director. Three of the 6 courses must have a science, engineering, or technology focus.

Students may search for approved courses in Yale Course Search by using the attributes indicated:

- 1 basic climate science credit (YC Climate: Basic Climate Sci)
- 1 science and impacts of anthropogenic climate change credit (YC Climate: Anthropogenic)
- 1 climate solutions credit (YC Climate: Solutions)
- 1 seminar on climate science and solutions (YC Climate: Sci/Solutions Sem)

- 3 of 6 courses must have science, engineering, or technology focus (YC Climate Science: Sci/Eng/Tech)

Other courses may be approved by permission of the certificate director. An on-topic summer internship can replace one elective.

No more than two course credits fulfilling the requirements of the Climate Science and Solutions certificate may overlap with a major, a simultaneous degree, a multidisciplinary academic program, or another certificate. Additionally, no course credit may be applied toward the requirements of more than two curricular programs. For example, the same course credit may not be used to fulfill the requirements of two certificates and a major. No more than four credits may come from a single department or school.

Completion Procedure and Advising

Students are encouraged to complete and submit the Declaration of Candidacy for a Certificate Form found on the University Registrar's website. The form should be submitted early, but at the latest, before the start of the student's last semester at Yale. Once submitted, the form goes to both the Certificate Director and the Registrar's Office. Final approval of the certificate rests with the Certificate committee and director.

REQUIREMENTS OF THE CERTIFICATE

Number of courses 6 course credits

Distribution of courses 1 course in each of three pillars; 3 of the 6 required courses must focus on science, engineering, or technology, and 1 should be a seminar on the climate science and solutions of climate crisis