

ATS 781A5: Climate Change, Justice, and Action for Atmospheric Scientists

Course Syllabus

Fall 2025 (2 credit hours)

Instructor:

Melissa A. Burt, she/her/hers
Associate Professor
Associate Dean for Access and Success

Office: ATS West 226

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Class Meetings:

Day and Time: Monday, 1:00-2:50 PM

Location: ATS West 121

Office Hours: By appointment

[Interactive Map of CSU Atmospheric Science](#)

[Bus Transportation to Atmospheric Science](#)

Textbook:

Johnson, Ayana Elizabeth, and Katharine K. Wilkinson, editors. *All We Can Save: Truth, Courage, and Solutions for the Climate Crisis*. One World, 2020. (Will be provided by instructor)

Prerequisites:

There are no prerequisites.

Course Overview:

This seminar course explores the intersection of atmospheric science and climate justice through the lens of the anthology, "All We Can Save." Through a blend of readings, discussions, activities, and guest speakers, we will delve into the disproportionate impacts of climate change on marginalized communities, the power of diverse voices in climate solutions, and the role of atmospheric scientists in driving meaningful action. Students will engage in dialogue, develop science communication skills, and explore pathways for integrating justice into their atmospheric science graduate research and careers. This seminar is designed to equip students with the knowledge and skills to address one of the biggest challenges faced by society and

empower students through leadership and action. Each week, the class will explore the thematic areas of the anthology which build upon one another. At the end of the course, students will consider how their own research relates to climate-change impacts, and identify ways to support action.

Course Objectives:

Upon successful completion of this course, students will be able to:

1. Explain the scientific basis of climate change from the perspective of atmospheric science including the impacts of climate change on human and natural systems.
2. Identify the scientific and social factors that contribute to climate inequities and vulnerability.
3. Apply a climate justice framework to an atmospheric science problem to understand the disproportionate impacts of climate change on marginalized and vulnerable communities.
4. Design, create, and evaluate a research or action plan that addresses climate vulnerability and promotes justice from their own graduate research

Course Structure and Content:

The course will be discussion based and benefit from participation by all. All weekly readings for the class will be posted on Canvas.

Grading:

Grades are based on attendance and participation in class discussion, assignments and final term project. Based on course content and discussions, students will work individually or in small teams to develop a community action service-learning project.

Grades are weighted as follows: reflection assignments: 10%, in-class discussion: 60%, term project: 30%.

Weekly Schedule for Fall 2025

Readings listed are provisional and will be assigned in canvas.

Week	Date	Topic	Activities/ Guest Speakers	Readings (Provisional, may change)
1	August 25	Introductions, Motivation, Class Engagement		

2	September 1	Labor Day (no class)		
3	September 8	Foundations of Climate Change Science Climate Justice frameworks: A lens through atmospheric science		
4	September 15	Intersectional perspectives on climate change: gender and racial equity		Chapter 1. <i>All We Can Save: Root</i>
5	September 22	No class (Melissa on travel)		
6	September 29	Advocating for change		Chapter 2: <i>All We Can Save: Advocate</i>
7	October 6	Climate change communication		Chapter 3: All We Can Save: Reframe
8	October 13	Climate Adaptation and resilience Part 1: extreme weather impacts on human health	Guest Lecture	Chapter 4/5: All We Can Save: Reshape & Persist
9	October 20	Climate Adaptation and resilience Part 2: extreme weather impacts on coastal communities		Chapter 4/5: All We Can Save: Reshape & Persist
10	October 27	Climate Adaptation and resilience Part 3: extreme weather impacts on food security and food systems		Chapter 7: All We can Save: Nourish
11	November 3	From IPCC to Climate Policy: Climate Policy Frameworks and Governance	Guest Lecture: TBD	

12	November 10	Envisioning the Future - Building a Just and Sustainable World		Case study visioning exercise based on student graduate research
13	November 17	Committing to Action: Community Action Service Learning Project Development		Project Development
14	November 24	Fall Break (no class)		
15	December 1	Reflection and action		Reflection on course activities and discussion towards action
16	December 8	Project Presentations		
	December 15	Finals week		

Inclusion Statement: CSU Atmospheric Science is a leading global institution, and as such, all members of our community regardless of race, ethnicity, culture, religion, sexual orientation, gender identity and expression, physical ability, age, socioeconomic status or nationality are welcome as equal contributors. We value and appreciate diversity, and we believe that diversity on our campus strengthens our entire scientific community. It is my intent that students from all backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

Student resources for outside and inside the classroom

We want you to be able to fully participate in the learning experience. Student resources for food, financial, and housing security; transportation; child care; health care; violence; and immigration issues are compiled at basicneeds.colostate.edu.

An additional list of student resources, which includes information on learning/accommodation resources, mental-health resources, student case management, and religious observances is at the following link and QR code: <https://col.st/2FA2g>



Statement on Academic Integrity: The course will adhere to the CSU Academic Integrity Policy as found in the General Catalog and the Student Conduct Code. At a minimum violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct services.

Bus Route to Atmospheric Science Campus

Transfort has a Foothills Campus shuttle that runs every 20 minutes from 6:50 am to 6:00 pm, with the last shuttle leaving the Atmospheric Science campus at 6:24 pm. Routes 2 and 3 run from the main Colorado State University campus to the Equine Center, one of the stops on the Foothills Campus shuttle. More information regarding bus stops, routes and times can be found at the [Transfort website](#).