

Multi-Campus Online UC Course for Bending the Curve
Upper-Division Multi-disciplinary Undergraduate Course



Bending the Curve: Climate Change Solutions

University of California, San Diego

Summer 2020

Syllabus

Instructor:

Fonna Forman (Political Science + Center on Global Justice)

BENDING THE CURVE: CLIMATE CHANGE SOLUTIONS

The UC Climate Solutions Course at UC San Diego

Scripps Institution of Oceanography + Department of Political Science

SIO 109R

POLSCI 117R

Summer 2020

Instructor:

Fonna Forman (Pol Sci): fonna@ucsd.edu

Office hours by appointment

Teaching Assistant:

John Porten (Pol Sci): john.porten@gmail.com

Visual Arts Graduate Curators:

Alex Neuman (Vis Arts): aneuman@ucsd.edu

Grace Grothaus (Vis Arts) sgrothau@ucsd.edu

ZOOM DISCUSSION	TA	ZOOM LINK
Tuesday + Thursday 10-10:50	John Porten	[REDACTED]

TA OFFICE HOURS	TA	ZOOM LINK
Tuesday + Thursday 8:30-9:30	John Porten	[REDACTED]

VIDEO DESIGN – A ALEX	Curator	ZOOM LINK
Week 2: Wednesday 10-12pm	Alex Neuman	[REDACTED]
Weeks 3-5: Mondays + Wednesdays 10am-1pm		[REDACTED]

VIDEO DESIGN – B GRACE	Curator	ZOOM LINK
Week 2: Tuesday 11am-1pm	Grace Grothaus	[REDACTED]
Weeks 3-5: Tuesdays + Thursdays 11am-2pm		[REDACTED]

Requirements / Grading:

- Participation in weekly Zoom Sessions and Discussion Threads (25%)
- Weekly Review Quiz performance (25%)
- Video-based final project due during exam week (50%).

Class Protocols:

UC Canvas: This is an online course. Please note: all course materials are located on the University of California Canvas Platform. NOT on UCSD Canvas.

Course Announcements: All course announcements will be posted through UC Canvas. Please check regularly. You should also receive emails when new announcements are posted.

Online Videos and Readings: As an online course, the instructional dimension of the course is conducted through online pre-recorded videos and associated reading assignments, authored by climate change experts across the University of California system, and beyond. Links for weekly assignments are all provided in UC Canvas. It is essential to keep up with weekly videos and readings, before attending the twice weekly Zoom Discussion sessions.

Twice Weekly Zoom Sessions: Students are expected to review all video lectures and associated readings assigned for each Zoom Discussion session, and come prepared to discuss topics and raise questions. Sessions meet Tuesdays and Thursdays, 10-10:50

Discussion Threads: Each week, students must complete six entries in the Discussion Threads on Canvas. Weekly questions are due by Sunday at midnight. Three entries must be well-constructed paragraph of your own; three can be responses to other students' entries. Of course you are encouraged to contribute as much and as often as you wish! Participation will comprise 10% of your final grade.

Weekly Review Quizzes: To ensure sure you are mastering the online materials, you must complete each week's Review Quizzes by Sunday at midnight. Some weeks have more Review Quizzes than others. Please pay close attention. They cumulatively comprise 10 % of your final grade.

Final Project: Each student will submit a final project, due during exam week, on Saturday August 1. Prompt is attached to this syllabus. Students can work individually or in teams, and will develop this project throughout the term, with the creative design and technical support of Alex Neuman and Grace Grothaus, our Visual Arts curators for the course.

Video Design Sessions: Each video project team / individual will be assigned to one of our two Visual Arts curators, and will sign up for mandatory weekly meetings of 15 minutes each, starting during week 3. The sign-up sheet will be available on Canvas. You are welcome to meet with your assigned curator more often, but one weekly meeting, starting during week 3, is mandatory.

COURSE SCHEDULE

	Tuesday 10-10:50
	Thursday 10-10:50

<u>WEEK</u>	<u>CLUSTER</u>	<u>TOPIC / ASSIGNMENT</u>
WEEK 1	Science Solutions	Introductions, Protocols Climate Change Science VIDEO 1: Climate Change (Ramanathan, UCSD)
		Bending the Curve: An Introduction VIDEO 2: Ten Clusters & Ten Solutions (Ramanathan, UCSD) Obstacles VIDEO 3: Obstacles to Climate Solutions (Davis, UCI)
WEEK 2	Social Solutions	Climate Justice VIDEO 4A: Climate Justice & Equitable Approaches (Forman, UCSD) VIDEO 4B: The Quest for Climate Justice (Pellow, UCSB)
	Governance Solutions	California as a Living Laboratory VIDEO 5: Lessons from California (Press UCSC) VIDEO 6: Carbon Neutrality Initiative of UC (St. Clair, UCOP)
WEEK 3	Governance Solutions	International Governance VIDEO 7: International Governance (Victor, UCSD)
	Market Solutions	Economics and Climate Policy VIDEO 8: Economics / Designing Climate Policy (Auffhammer, UCB)

	Social Solutions	<p>Social Norms + Behavior VIDEO 9: Changing Social Norms and Behavior (Forman, UCSD)</p> <p>Social Movements VIDEO 10: Social Movements and Social Solutions (Han, JHU)</p>
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WEEK 4	Social Solutions	<p>Communication VIDEO 11A: Climate Science Communication (Somerville, UCSD)</p> <p>VIDEO 11B: Climate Communication (Christensen, UCLA)</p> <p>Religion VIDEO 12: Climate Change, Christianity and the Real Challenges (Hayhoe, Texas Tech)</p>
	Technology Solutions	<p>Energy Technologies VIDEO 13: Energy Technology Pathways (Samuelson, UCI)</p> <p>Transportation VIDEO 14: Transportation Pathways (Sperling, UCSD)</p>

WEEK 5	Technology Solutions	<p>Super-Pollutants VIDEO 15: Technologies for SLCP Mitigation (Ramanathan, UCSD and Zaelke, UCSB)</p> <p>Renewables VIDEO 16: Renewable Energy (Samuelson, UCI)</p>
		<p>Nuclear VIDEO 17: Nuclear Energy (Peterson, UCB)</p> <p>Carbon Removal VIDEO 18: Enhancing Carbon Sinks (Silver, UCB)</p> <p>VIDEO 19: Negative Emissions Technology (Aines, LLNL)</p>

Final Project Guidelines: A *Bending the Curve* Communication Video

Due on Canvas, Saturday August 1 2020, midnight.

Students will produce a video of 2-3 minutes, designed to communicate a complex climate change concept to a particular type of audience. Students will also prepare a brief 3 page essay describing the project and its intentions. What communication strategies did you employ to create the video? Which clusters are implicated in the problem you hope to solve? What behaviors do you hope your audience will change after viewing your work? The video and essay will be graded together, and will enable us to evaluate how well the video draws on *Bending the Curve* course materials.

VIDEO TOPICS: Students will choose the concept they wish to communicate from a set of seven options, drawn from *Bending the Curve*. These topics are listed on the following page. Please explore them and be ready to pick your option before Tuesday's discussion session during week 2.

INTENDED AUDIENCE: Students will also select the kind of audience / demographic they wish to target with their video, from the following four options:

1. Young learners (Grades 3-6)
2. Teen learners (Grades 7-12)
3. Adults who accept climate change, but are less clear about what to do
4. Adults who are skeptical (Outright deniers are not among our target audiences.)

INDIVIDUAL OR TEAM PROJECT?: Students can work individually or in teams, if preferred. We will provide ways for students with shared interests to connect.

CREATIVE / GRAPHICS SUPPORT: Our Visual Arts Graduate Curators, Alex Neuman and Grace Grothaus, will provide creative design and technical support for video ideation and production, meeting regularly with individuals and teams to help brainstorm ideas, translate ideas into visual tools, and produce the video. Each video project team or individual (if working alone) will be assigned to one of the curators. Starting in Week 3, individuals / teams will meet weekly with their assigned curator, and more often if desired. Weekly sign-up sheets will be available on Canvas.

***BENDING THE CURVE* COMMUNICATION VIDEO ARCHIVE:** Videos will be archived at the UCSD Center on Global Justice and the Scripps-Birch Aquarium, as a public-access resource for K-12 and adult audiences. Students may opt-out if they wish.

Due on Canvas: Saturday, August 1, 2020, midnight.

VIDEO TOPIC choices:

1. **THE REALITY OF CLIMATE CHANGE:** The climate problem is serious. It is happening. It will become catastrophic in 10 to 15 years if we don't take drastic actions soon.
2. **SCIENCE MATTERS:** You don't have to “believe” in climate change science. Science is driven by data with tremendous accuracy. If you are computer savvy, you can do the analysis yourself. If not, it makes sense to trust the data, and the analyses of the data, by thousands of scientists, universities and academies across the world.
3. **CLIMATE IMPACTS:** Unchecked climate change will expose billions of people (at least 6-7 billion) to heat stress; cardio-vascular disease; vector-borne illness (chikengunya; Lyme etc.) and zoonotic diseases (COVID-19); mental illness; and loss of homes and livelihoods to floods, storms and fires, producing dramatic climate migration across the world.
4. **CLIMATE SOLUTIONS ARE POSSIBLE:** Climate change is a solvable problem. We cannot feel paralyzed! We CAN bend the curve, by connecting bottom-up behavioral change and voting behavior, with strong top-down leadership.
5. **CLIMATE SOLUTIONS ARE DESIRABLE (THEY BENEFIT ALL):** Climate solutions will clean our air, water and soil; improve our health; and beautify our planet. Solutions do not require that we return to the stone age. We have learned from the COVID-19 crisis that “public health” and “economic well-being” are not divergent goals. They are integrated. Economic well-being rests on the well-being of people and planet.
6. **WE ARE INTER-CONNECTED:** We are all interconnected. Pollution anywhere will lead to warming everywhere. We must work together. Selfishness is self-destructive. We must see climate change as a global public good. This means helping developing nations, and vulnerable populations within developed nations, participate in mitigation strategies.
7. **CLIMATE SOLUTIONS MUST INCLUDE URGENT ADAPTATION:** Climate change disproportionately impacts the health and well-being of vulnerable populations across the globe – those who are least responsible for producing GHG emissions. Climate justice demands that we expedite adaptation strategies. Vulnerable people cannot wait until we bend the curve. The impacts of climate change on the livelihoods, housing and health of the poor are happening now, and are rapidly accelerating as the planet warms.

BENDING THE CURVE

EXECUTIVE SUMMARY

Ten scalable solutions for carbon
neutrality and climate stability

Ramanathan et al, 2015:
Executive Summary of the Report, [Bending the Curve:](#)
10 scalable solutions for carbon neutrality and climate stability.

Published by the University of California, October
27, 2015

https://uccarbonneutralitysummit2015.ucsd.edu/_files/Bending-the-Curve.pdf



UNIVERSITY
OF
CALIFORNIA

Carbon Neutrality Initiative

Berkeley
UNIVERSITY OF CALIFORNIA

UC DAVIS
UNIVERSITY OF CALIFORNIA

UC Irvine
UNIVERSITY OF CALIFORNIA, IRVINE

UCLA

UNIVERSITY of CALIFORNIA

Office of the President

UCSF

University of California
San Francisco

UC San Diego

UNIVERSITY OF CALIFORNIA
UC MERCED



UNIVERSITY OF CALIFORNIA

SANTA CRUZ

UCSB

UNIVERSITY OF CALIFORNIA
SANTA BARBARA

UNIVERSITY OF CALIFORNIA
UC RIVERSIDE