

Environmental Studies 50, Spring 2018
Bending the Curve: Climate Change Solutions

Phelps 2516, T/Th, 3:30-4:45

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“If the world is to be healed through human efforts,
I am convinced it will be by ordinary people,
people whose love for this life is even greater than their fear.
People who can open to the web of life that called us into being.”

—*Joanna Macy*

Course Description.

This course is a unique solutions-oriented introduction to climate change and covers a range of perspectives from across the scientific, technological, economic, and social justice communities. It utilizes a multi-media learning approach that culminates in a final group project that builds upon the Carbon Neutrality Initiative of the UC system. Throughout the course, we will connect with and analyze research to explore the various ways in which new and transformative solutions are being imagined and investigated in order to inspire action.

Studying climate change means not only paying attention to carbon emissions and technology, but also looking deep into the social fabric of life. We are living in a moment of intense struggle and uncertainty for members of socially, economically, environmentally, and culturally marginalized communities. As such, we will approach climate change as a wicked problem involving actors from a variety of backgrounds and perspectives.

Drawing on concepts from the social sciences, we will come to see how climate change solutions entail questions about societal change, human agency, and environmental justice. Throughout the quarter, we will encounter a number of case studies that illustrate the myriad ways in which the technical, scientific, and social aspects of climate change interconnect with inequality, resistance, and strategies for social change. Together, we will consider and debate perspectives from scholarly studies from across the UC campuses and the world.

The point of this course is to empower you with critical thinking and a sense of hope. It's not the end of the world yet! People all over the planet are linking hands and minds, both in real and virtual spaces, to find answers. Together, we will identify opportunities for action within our own communities and imagine creative solutions that can help build ecologically sustainable and just futures.

Flipped Classroom Structure

This course combines the best elements of traditional in-person lectures with a flipped classroom experience. Readings, discussions, and lectures will be complemented by pre-recorded video lectures delivered by experts from across the UC system.

- Video Lectures can be found on the Canvas portal. Students are expected to review the video lectures **BEFORE CLASS** and arrive prepared with questions and discussion topics.
- Students will be divided into small groups of 5-6. Each group will submit a group project executive summary in addition to an individual report that covers their contribution to the group report.
- Three among the total number of submitted projects will be chosen for inclusion in the California Digital Library dedicated to Climate Solutions, a permanent archive.
- Class time will be devoted to a mixture of activities including discussion, presentations, and informal writing assignments. A typical class meeting will consist of the following:
 - ▶ Announcements and the creation of an interactive agenda for class time based on concepts and student questions (building on the previous meeting's agenda)
 - ▶ Thirty minutes of open discussion or mini-lecture (depending on the topic)
 - ▶ Ten minutes of informal writing to synthesize, complicate, or counter ideas that have already been discussed or presented, or to identify the “most important point” or the “muddiest point” in discussion
 - ▶ Daily “Think/Pair/Share” based on a short in-class reading assignment, a film clip, or another soundbite to be determined by the instructor
 - ▶ Conclusion and brief summary of next meeting's topic

Accessing the UC Online Course System (Canvas)

All readings, videos, and course materials will be available on the UC Online Course System (Canvas). Follow these steps when you're ready to enter the course site:

1. Visit the UC Online login page: <https://login.uonline.edu>.
(Note that this course site runs on different servers than your campus's online course system, therefore you **must use this login URL** to access your UC Online course)
2. Click UC Campus Student and Faculty in the login box
3. Click your home campus from the list that appears
4. Log in using your existing campus login ID and password. (If you are a new student and have not activated your campus ID, you must do so first; contact your campus registrar or the identity system manager at your campus for help.)
5. Click on the course title from the list that appears on your Canvas home screen.

Technical Support: If you're having trouble accessing your course, click Help with Login in the top navigation bar on the login screen. For technical support issues once you're logged in, click Help in the top-right corner of the screen and select from the options presented.

Additional Resources and Support

Students with disabilities may request academic accommodations for exams online through the UCSB **Disabled Students Program** at <http://dsp.sa.ucsb.edu/>. Please make your requests for exam accommodations through the online system as early in the quarter as possible to ensure proper arrangement.

The Mental Health Peer Program (MHPP) is a UCSB campus resource offering guidance with regard to stress management, anxiety, depression and other related challenges. For helpful resources, please contact UCSB **Counseling & Psychological Services (CAPS)** at 805-893-4411 or visit <http://counseling.sa.ucsb.edu/>.

For writing support and general academic support visit **Campus Learning Assistance Services (CLAS)**. CLAS can help with the entire writing process and offers instructional groups, drop-in tutoring, writing and ESL services, skills workshops and one-on-one consultations. CLAS is located on the third floor of the Student Resource Building, or visit <http://clas.sa.ucsb.edu>

Schedule of Lectures and Assignments

* Please note that this schedule is subject to change as things shift over the course of the quarter, so please check Canvas regularly and look for emails from the instructor

WEEK ONE			
Tues. 4/3	A <i>Super Wicked Problem</i>	<i>Introduction and outline of course structure, objectives, and expectations</i>	 “Climate Change is a Super Wicked Problem”  Survey
Thurs. 4/5	The Hard Facts	 I. Ramanathan: <i>Climate Change</i> II. Rignot: <i>Sea Level Rise From Melting Ice</i>	 Review Quiz 1
WEEK TWO			
Tues. 4/10	Beyond Doom and Gloom	 I. Ramanathan: <i>Six Clusters & Ten Solutions</i>	 “Bending the Curve (Executive Summary)”  Review Quiz 2
Thurs. 4/12	What We’re Up Against	 Film  I. <i>The Age of Stupid</i> (Directed by Franny Armstrong, 2009) II. Davis: <i>Obstacles to Climate Solutions</i>	 “Dystopia is for Losers” (Henwood 2012)  Reflection Paragraph 1
WEEK THREE			
Tues. 4/17	An Uneven Playing Field	 I. Forman: <i>Climate Justice & Equitable Solutions</i> II. Pellow: <i>The Quest for Climate Justice</i>	 “Chapter 8: Bending the Curve and Closing the Gap”  Review Quiz 3

Thurs. 4/19	 <i>Spotlight</i> Solution #2 Foster a Culture of Climate Action	 Video Lecture	I. Han: <i>Your Leadership: Social Movements and Social Solutions to Climate Change</i>	 “Meet the Teens Schooling Us on Climate” (Holthaus 2018) ✍️ Reflection Paragraph 2
WEEK FOUR				
Tues. 4/24	 <i>Spotlight</i> Solutions #1 & #9 Reduce Short-Lived Climate Pollutants	 Video Lecture	I. Ramanathan & Zaelke: <i>Technologies for SLCPs Mitigation</i>	 “Chapter 3: Science and Technology Pathways for Bending the Curve”
Thurs. 4/26	Group Proposal Presentations	<i>Student groups make a brief presentation of their proposals, including any challenges they may face</i>		✍️ Group Proposal
WEEK FIVE				
Tues. 5/1	 <i>Spotlight</i> Solution #3 Deepen Cultures of Climate Collaboration	 Video Lecture	I. Forman: <i>Changing Social Norms & Behavior</i> II. Miles: <i>Role of Religion in BtC</i>	 “Chapter 9: Establishing a Common Ground” ✍️ Reflection Paragraph 3
Thurs. 5/3	 <i>Spotlight</i> Solution #4 Scale Up Governance and Collaboration	 Video Lecture	I. Victor: <i>International Governance</i>	 “Chapter 6. Scaling Up Solutions to State, National and Global Levels” ✍️ Review Quiz 4
WEEK SIX				
Tues. 5/8	 <i>Spotlight</i> Solutions #5 & #6 Adopt Market-Based Instruments and Regulatory Measures	 Video Lecture	I. Auffhammer: <i>Economics: Impacts and Policy</i> II. Jacobsen: <i>Cost Effective & Efficient Climate Policies</i>	 “Chapter 4. Economic Considerations” ✍️ Review Quiz 5
Thurs. 5/10	 <i>Spotlight</i> Solutions #7 & #8 Promote Renewables	 Video Lecture	I. Samuelson: <i>Renewable Energy</i>	 “Chapter 5. Assessing the Need for High Impact Technology Research...” ✍️ Reflection Paragraph 4

WEEK SEVEN			
Tues. 5/15	 <i>Spotlight</i> Solution #10 Regenerate Damaged Ecosystems	 I. <i>Silver: Enhancing Carbon Sinks</i>  II. Al Jazeera: <i>Coral Catastrophe: The Fight to Save Our Dying Reefs</i>	 "Chapter 10. Trees Have Already Been Invented"  Reflection Paragraph 5
Thurs. 5/17	Review of the 10 Solutions	<i>Groups will present summaries of the ten solutions and juxtapose these with findings from Drawdown</i>	 Drawdown.org/solutions
WEEK EIGHT			
Tues. 5/22	Case Study: Divergent Paths of Sustainability	 <i>Ashes to Honey</i> (Directed by Hitomi Kamanaka, 2010, 1hr 56m)	 Selected readings on energy democracy and energy justice
Thurs. 5/24			 Group Progress Report
WEEK NINE			
Tues. 5/29	Group Work	<i>Student groups will be given class time to work on projects and consult with instructor</i>	 Film Review
Thurs. 5/31	Putting it All Together	<i>Wrap-up and in-class lecture by S. Gray</i>	
WEEK TEN			
Tues. 6/5	Group Presentations	<i>First set of groups deliver final presentations to class</i>	
Thurs. 6/8	Group Presentations	<i>Second set of groups deliver final presentations to class</i>	
FINALS WEEK			
Thurs. 6/14	<i>Final Projects Due in Bren Hall 4027 between 4-7pm</i>		 Final Projects Due

Assignments and Evaluation: There will be no midterms or final in this course. Students grades will be based on 1) class participation, 2) a group project (which contains several components – proposal, an executive summary, a final in-class presentation, and a 7-10 page individual project report, which will be graded on an individual basis), 3) a series of review quizzes and reflection paragraphs, and 4) a film review. Course requirements are described in detail below.

Class Participation	30%
Group Project	50%
Review Quizzes & Reflection Paragraphs	10%
Film Review	10%

Class Participation is absolutely essential to the functioning of this course. I expect you to come to class with thoughts and questions from the readings and video lectures and to participate in respectful and considerate discussion and debate.

Review Quizzes & Reflection Paragraphs: When assigned, review quizzes must be completed prior to class based on that day’s assigned video lecture. This quiz is meant to facilitate comprehension and the timely completion of online content viewing. Reflection paragraphs should include (at the minimum) a summary of two key ideas that you found most interesting and one question and are due before class.

Film Review: You will be asked to write a short (2 double-spaced pages) reflection on *Ashes to Honey* (Directed by Hitomi Kamanaka, 2010). I will screen this film in class during Week 8. Do not summarize the film in your review. Use your space to develop an argument and discuss the film from your perspective. It is recommended that you take notes and refer to specific scenes. This assignment is due on May 29.

Group Project. In the second week, you will be asked to rank your preferences from a set of project options and form groups of 6 students. The final project will consisted of a group proposal, a final paper (including a group executive summary), a 7-10 page individual project report, which will be graded on an individual basis, and a creative group presentation.

1. *Proposal:* Due fourth week (April 26)

The group proposal will detail the specific case study, focusing on understanding what is currently being done and a work plan for the project over the course of the quarter. Proposals will be presented to the entire class.

2. *Progress Report:* Due eighth week (May 24)

Groups will provide a bullet-point update of their progress to date.

3. *Final Presentation*: Due tenth week (June 5/8)

Each group will prepare a ten minute presentation for the class in a format that they have discussed with the instructor ahead of time (for example multi-media, short video, role play, performance, PechaKucha, or more traditional presentation).

4. *Final Materials*: Due finals week (June 14, between 4-7pm in Bren 4027)

Group executive summary and individual project reports are due (Look to the Bending the Curve full report and Executive Summary as an example of how information from individual projects should be organized in the Executive Summary.)

A. Executive Summaries should address (in five pages):

- Your case study's history of addressing climate change and future goals
- What has been successful so far
- How the six clusters and ten solutions relate to what is being done
- Areas for improvement and solutions not utilized
- A plan for improvement moving forward

B. Individual Papers (7-10 pages) should explore in depth one of the themes or examples covered in the Executive Summary.

Academic Integrity. The Office of Judicial Affairs has definitions, policies, and resources for proper citation use, available on their website at: <http://judicialaffairs.sa.ucsb.edu>. This includes submitting the same work for two courses without my consent. If I detect academic dishonesty on any assignment, you will receive an F for the assignment, and quite possibly for the course, as well as face potential disciplinary action from the University.

Late Assignments. I expect all assignments to be submitted on time. A 10% deduction will be applied for every day a paper is late. I will not accept papers submitted over one week after the deadline. If you become ill or have an emergency, please let me know within 48 hours.

Format. The format guidelines for all papers in this course are 1" margins all around, 12 point size, Times New Roman font, double spaced. Papers should appropriately cite (within the text, and in a references section) sources using the Chicago style). Page numbers should be included for all citations. Visit <https://owl.english.purdue.edu/owl/resource/583/03/> for instructions on Chicago style. In text citations should be, for example (Author 2005, 65). Students who make use of Campus Learning Assistance Services to improve their writing, and attach the small blue slip to their final paper or film review, are eligible for extra credit: <http://clas.sa.ucsb.edu/writing-esl-foreign-language>.