

SIO25: Climate Change and Society WI17

Dr. Jane L. Teranes

Lectures: MWF 10:00-10:50am, Cognitive Science Building (CSB) 002

Final Exam: Friday March 24th, 2017, 8am–11am

Dr. Teranes' Office hours: Wednesdays 1pm-3pm **Office:** Galbraith Hall 367

I am also available by email and by appointment.

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Graduate Students Readers/Graders for this course:

Yassir Eddebbar (yeddebba@ucsd.edu) and Jennifer Maria-Benavides (jmariabe@ucsd.edu)

Objectives:

This course will focus on scientific understanding of global climate change and examination of policy questions. By the end of this course, you should be able to (1) understand and describe the science of climate change; (2) identify and explain global symptoms of climate change and (3) be familiar with technological, economic and political solutions for reducing greenhouse gas emissions (4) be able to effectively engage in the public policy debate on climate change solutions and (5) be able to accurately and effectively relate information on climate change to a general public audience.

Reading:

-Required Book: Introduction to Modern Climate Change 2nd edition, Andrew Dessler, Cambridge University Press. 2016.

-Recommended Book: The Thinking Person's Guide to Climate Change, Robert Henson, American Meteorological Society, 2014.

-Additional articles will be required and will be distributed and/or available online or on the course website (e.g. IPCC summary reports, federal agency reports, journal articles, etc.)

Grading:

20% i>clicker and participation points

20% Homework assignments (assigned approximately weekly)

30% Two mid-term exams (15% each)

30% Final Exam (cumulative)

Extra credit: Campus seminars that will be announced **in class** throughout the quarter.

Course Format:

Class will consist of lecture material, assigned reading, in-class clicker questions, in-class discussion, homework assignments, mid-terms and a final. The lectures and required reading assignments form the significant portion of the class material and in-class clicker questions will regularly assess your understanding of the material. Weekly homework assignments will give you practice and experience with the material in the reading and the lecturers. There are two mid-terms and a final that will assess your overall understanding of the course material.

Course Schedule*

Date	Topic	Assigned Reading
1/9	Top Climate Stories of Last Year and What to Expect in 2017	
1/11	Understanding Climate: A Primer	Dessler, Chapter 1 Henson Part 1, Chapters 1 and 2
1/13	Who's Responsible?	Dessler, Chapter 1 Henson Part 1, Chapter 3
1/16	Martin Luther King Holiday No class	
1/18	How is the Climate Changing?	Dessler, Chapter 2 IPCC WG1 AR5 SPM section B: http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf
1/20	The Symptoms of Climate Change: Extreme weather	Dessler, Chapter 9 Henson Part 2, Chapters 4, 5, 8
1/23	The Symptoms: Shrinking Snowpack, Melting Ice	Dessler, Chapter 9 Henson Part 2, Chapter 6
1/25	The Symptoms: Changing Oceans - Sea Level Rise and Ocean Acidification	Henson Part 2: Chapter 7 Nat Geo: Rising Seas (http://ngm.nationalgeographic.com/2013/09/rising-seas/folger-text) Pacific Marine Environmental Laboratory, NOAA (http://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F)
1/27	The Symptoms: Ecosystems and Agriculture	Dessler, Chapter 9 Henson Part 2: Chapter 7
1/30	The Science: Greenhouse Gases and the Greenhouse Effect	TBD
2/1	The Science: Radiation and Energy Balance	Dessler, Chapter 3 IPCC AR5 SPM section C: (http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf)
2/3	Midterm #1	
2/6	The Science: A simple climate model	Dessler, Chapter 4 Henson Part 3, Chapter 12
2/8	The Science: The Carbon Cycle	Dessler, Chapter 5
2/10	The Science: Climate Forcing, Feedbacks and Sensitivity	Dessler, Chapter 6

2/13	The Science: Putting it all together	Dessler, Chapter 7 IPCC AR5 SPM section D: (http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf)
2/15	What the Future Holds	Dessler, Chapter 8 IPCC AR5 SPM section E.1-7: (http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf)
2/17	What the Future Holds: The Carbon Bathtub	Dessler, Chapter 10 Nat Geo: The Carbon Bathtub (http://ngm.nationalgeographic.com/big-idea/05/carbon-bath) IPCC AR5 SPM section E.8: (http://ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SPM_FINAL.pdf)
2/20	Presidents' Day Holiday No class	
2/22	Paleoclimate: A Long View of Climate Change	Henson, Part 3, Chapter 11
2/24	Midterm #2	
2/27	Global Energy Consumption	TBD
3/1	Climate Change Solutions: A Primer	Dessler, Chapter 11 Henson, Part 4, Chapter 14
3/3	Climate Change Solutions: Mitigation	Dessler, Chapter 12 Henson, Part 4, Chapter 16
3/6	Climate Change Solutions: Climate Science and Policy	Dessler, Chapter 13 Henson, Part 4, Chapter 15
3/8	Climate Change Solutions: What will it take to "fix" the climate?	Dessler, Chapter 14
3/10	Climate Change Solutions: Where are we now?	TBD
3/13	UC report – Bending the Curve	Bending the Curve- 10 scalable solutions for carbon neutrality and climate stability.
3/15	What can you do?	Henson, Part 5
3/17	Final Review	
3/24	Final Exam 8:00 AM	

***Note:** The schedule of topics and assignments set forth in this syllabus is tentative and may be modified as needed throughout the quarter. In particular, additional required reading may be assigned. Notice of such changes will be by announcement in class or by written or email notice and any updates or changes to this syllabus will be posted on the course website at ted.ucsd.edu.

Course Policies:

Students are expected to attend class and remain in class for the duration of the session. Failure to attend class or arriving late may impact your ability to achieve course objectives which could affect your course grade. An absence, excused or unexcused, does not necessarily relieve a student of any course requirement. Late assignments will not be accepted. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written assignments. I conduct this class in an atmosphere of mutual respect and I encourage your active participation in class discussions. Integrity, honesty and respect are expected of all participants in their relations with other participants and instructors. **Any conduct during class discussions that seriously disrupts the atmosphere of mutual respect will not be tolerated.**

i>clicker

I will be using the i>clicker student response system in class this quarter. i>clicker questions will be based on reading assignments in order to encourage you to complete the reading assignments before the class period. I use the i>clicker responses to better understand what you've learned from the reading so that I can review material in lecture as necessary. Participation with i>clicker is worth 10% of your grade. **You much register your i>clicker in TED.**

I consider bringing a fellow student's i>clicker to class to be cheating and a violation of the UCSD academic integrity code. If you are found to have a remote other than your own, or if you have registered points for classes that you did not attend, you will forfeit all your i>clicker points and may face additional disciplinary actions. See below for further statements on academic integrity.

Academic Integrity Statement:

Integrity of scholarship is essential for an academic community. This course will adhere strictly to the UCSD policy on academic integrity: "Students are expected to do their own work without unauthorized aids of any kind," as outlined in the UCSD Policy on Integrity of Scholarship. Academic misconduct will not be tolerated, and will result in disciplinary process. For details, see <https://students.ucsd.edu/academics/academic-integrity/ai-and-you.html>.