

HONR 229L: Climate Change: Science, Economics, and Governance

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Fall 2019: Tues – Thurs 12:30 to 1:45 pm, Atlantic 3408

Website: <http://www.atmos.umd.edu/~rjs/class/honr229L>

Required Text:

[Collapse: How Societies Choose to Fail or Succeed](#) by Jared Diamond

[Earth: The Sequel: Race to Reinvent Energy](#) by Fred Krupp & Miriam Horn

[Paris Climate Agreement: Beacon of Hope](#) by Ross Salawitch et al. (PDF is free)

Other Resources:

[IPCC 2007 WGI Frequently Asked Questions](#)

[Sapiens](#) by Yuval Noah Harai (we'll read Ch 16, which will be provided)

[Beyond Oil and Gas](#) by George Olah et al. (we'll read part of Ch 8, which will be provided)

[Power to Save the World: The Truth About Nuclear Energy](#) by Gwyneth Cravens (we'll read Ch 16 and part of Ch 17 that focus on disposal of nuclear waste; material will be provided)

[Tufts Univ GDAE Modules](#) (we'll use two)

Supplemental Readings:

Numerous articles, with a focus on newsworthy events related to the particular class topic.

Course Description. This seminar will begin by examining how the sustainability of various societies has been affected by government decisions. We will then focus on critical examination of the science that underlies modern climate change, including discussion of the bridge between the “deniers” and the “believers”. Next, the practicality and economics of various forms of renewable energy will be discussed. The last portion of the class will focus on possible solutions to the climate change. A hallmark of our “honors” seminar teaching style is that ***each student will lead one class discussion during the semester.*** During the final few weeks of this seminar, students will break into three groups, with the assignment to negotiate a plan for the implementation of large-scale renewable energy by year 2060, in the Developed World, China, and the Developing World.

Prerequisites: None. This course will be taught at a basic level, without the use of advanced mathematics or high level economic theory.

Grades: Grades will be determined based on short writing assignments for each reading termed “admission tickets” (50%), a mid-term paper (25%), evaluation of student led discussion and class participation during the semester (10%), and a final paper that reflects each student’s view on some aspect of climate change related to the final project (15%).

Course Topics

- Historical overview of how the sustainability of various societies has been affected by governance
- Top-down versus bottom-up approaches to governance of ecological threats
- Scientific underpinnings of modern climate change
- Practicality and economics of various forms of renewable energy
- Consequences of future climate change: mitigation, adaptation, and economic disparities between the first world and developing world
- Possible solutions to climate change

Date	Topic	Reading	Discussion #
08/27	Class Introduction	None	Class Intro
08/29	Overview of Climate Change	None, but please complete AT	Climate Intro
09/03	Past Societies, Failure: Easter Island	Diamond: Ch 2 (41 pages)	Discussion 1
09/05	Past Societies, Failure: The Maya	Diamond: Prologue (24 pages) & Ch 5 (21 pages)	Discussion 2
09/10	Past Societies, Success: New Guinea, Tikopia and Japan	Diamond: Ch 9 (32 pages)	Discussion 3
09/12	Modern Societies: Dominican Republic and Haiti	Diamond: Ch 11 (29 pages)	Discussion 4
09/17	Modern Societies: China	Diamond: Ch 12 (20 pages)	Discussion 5
09/19	Roadmaps for Success or Failure	Diamond: Ch 14 (22 pages)	Discussion 6
09/24	Business and the Environment	Diamond Ch 15 (45 pages)	Discussion 7
09/26	Introduction to Climate Change	IPCC 2007 FAQ (36 pages)	Discussion 8
10/01	Climate Models: Perspective of a Physical Scientist	Houghton, Ch 5 (38 pages)	Discussion 9
10/03	Climate Models: Perspective of a Social Scientist	Nate Silver: Ch 12 (42 pages)	Discussion 10
10/08	Impacts of Climate Change	Union of Concerned Scientists & Climate Reality Project webpages	Discussion 11
10/10	Solar Energy	Krupp: Ch 2 (30 pages) * or * Krupp: Ch 3 (29 pages)	Discussion 12
10/15	Biofuels	Krupp: Ch 4 (17 pages) & Krupp: Ch 5 (27 pages)	Discussion 13
10/17	Hydro, Geo & Wind	Olah, Secs 8.1 to 8.4 (15 pages) & GDAE DOC 1 (16 pages)	Discussion 14
10/22	Nuclear Energy	Olah, Sec 8.8 (21 pages) Cravens, Ch 16 & 17 (38 pages)	Discussion 15

Date	Topic	Reading	Discussion #
10/24	The Capitalist Creed	Harari: Ch 16 (33 pages)	Discussion 16
10/29	The Economics of Renewable Energy	Tufts GDAE Doc 1 (pages 17 to 42)	Discussion 17
10/31	Economics of Climate Change	Tufts GDAE Doc 2 (pages 15 to 45)	Discussion 18
11/05	Possible Solutions	Krupp: Ch 9 (43 pages)	Discussion 19
11/07	The Paris Climate Agreement	Chapter 3, Paris Climate Agreement: Beacon of Hope (23 pages)	Discussion 20
11/12	Implementation of the Paris Climate Agreement	Chapter 4, Paris Climate Agreement: Beacon of Hope (28 pages)	Discussion 21
11/14	Fracking Presentation & Organize Final Project	FIRST PAPER DUE	Project 0
11/19	In Class Project 01	None	Project 1
11/21	In Class Project 02	None	Project 2
11/26	In Class Project 03	None	Project 3
12/03	In Class Project 04	None	Project 4
12/05	Presentation of Energy Plans	None	Project 5
12/09	SECOND PAPER DUE		

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<https://ugst.umd.edu/courserelatedpolicies.html>

Topics that are addressed in these various policies include academic integrity, student and instructor conduct, accessibility and accommodations, attendance and excused absences, grades and appeals, copyright and intellectual property.