

TESC MES elective ... 4 cr ... Winter 2020 ... Wednesdays 6-10 pm ... Zita

Climate Science and Climate Change: From Challenges to Opportunities

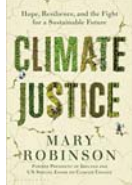
This elective provides an overview of key principles and dynamics of climate change, with deep dives into select areas. We will study the physical science, where students will get a solid grounding in fundamental climate dynamics between atmosphere, oceans, and land. We will then explore frameworks for understanding impacts, adaptation, and vulnerability of diverse regions and populations. Finally, we will study the costs, risks, and benefits of major mitigation options. Students will have opportunities to study specific areas of interest in greater depth through research. You will write a short essay every other week, and a synthesis/analysis at the end of the quarter. We will have one primary text and one seminar text, supplemented with recent and classic literature in the field.

Workshops will facilitate development of quantitative reasoning skills, including pre-calculus and graphical analysis. Algebra is pre-requisite, and will be an opportunity to improve your algebra skills. More advanced analysis skills may be developed in the context of your research, if you like.

Textbooks:

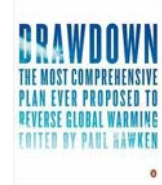


Global Climate Change: Turning knowledge into action, by David Kitchen, 2013 (used copies and e-books are available online). We will supplement this science textbook with readings from the IPCC, NCA, and the **NW Indian Fisheries Commission: Climate Change and our Natural Resources** (2016)



Climate Justice: Hope, resilience, and the fight for a sustainable future, by Mary Robinson, 2013
We will supplement this seminar text with the free online version of **Project Drawdown**: <https://www.drawdown.org/>

Online:



Selections will be drawn from each reading to keep the volume manageable.

Faculty: E.J. Zita, PhD, physics zita@evergreen.edu 360-628-6969 (text is great) 1014 Lab 1

See over for draft Assignments and Schedule.

Draft ASSIGNMENTS (all on Canvas)

Weekly: **Seminar responses**, to be posted before class. Prompts will be provided. Ask questions, share insights, and discuss readings.

Every other week: **Short essays** will explore a topic you choose, integrated with our readings. Page limit does not include references.

Alternate weeks: **Peer feedback** on short essays.

By agreement: student **facilitation** of seminar

Major assignment: Your short essays will culminate in a **final analytic and synthetic essay** (5 p, not including references).

Reflections: Midquarter and end-of-quarter reflections

Evaluations and Portfolio

Draft SCHEDULE for Climate Change and Climate Science:

<u>2020</u>	<u>week</u>	<u>topic</u>	<u>Read</u>	<u>Assignments</u>
08-Jan	1	Introduction to Climate	Intros (online)	Weekly seminar response
15-Jan	2	Global Climate Change	Part 1: Evidence	1 page essay (Group A)
22-Jan	3	Impacts on NW Tribes	NWIFC	1 page essay (Group B)
29-Jan	4	Global Climate Change	Part 2: Energy	2 page essay (Group A)
05-Feb	5	Climate Justice	Robinson	2 page essay (Group B)
12-Feb	6	Global Climate Change	Part 3: Deep Time	midquarter reflection
19-Feb	7	Updates	NCA + IPCC	3 page essay (Group A)
26-Feb	8	Global Climate Change	Part 4: Impacts	3 page essay (Group B)
04-Mar	9	Solutions	Drawdown	5 page essay (everyone)
11-Mar	10	Global Climate Change	Part 5: Solutions	Brief reports & final reflection
18-Mar	evals			portofolio and evaluations