APSC 498T - 201
Decarbonization Technology and Policy
Student Directed Seminar – Spring, 2019

Credits	3
Lectures:	Tues Thurs, 6:30 - 8:00pm CEME 1206
Course Coordinators:	Ashna Misra & Jackson Herron
Faculty Sponsor:	Amanda Giang
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Content

This course explores engineering solutions for climate change mitigation. Decarbonization, the removal of greenhouse gas emissions from human systems, is the central theme of the course. Technology & policy, climate change, capitalism, global and local politics, and engineering professional agency are explored.

Course Structure

This course is a peer-directed and discussion based seminar. Students are expected to do their readings and participate in class discussions. The course is 90% peer graded. The course syllabus is developed by the coordinators, but is open to adjustments to suit the interests of the participants. The organization structure is flat, and input from participants to co-develop course content is welcome. Most classes will begin with peer review of weekly reading reflections, and proceed into discussion topics and activities. There will be minor lecturing and top-down learning. Diversity of all types (including opinion) is welcome, and course discussions will operate under a safe space contract. Respect and encouragement are values of the course.

Learning Outcomes

Students will be able to:

- Engage with climate justice perspectives in understanding and discussing the causes and impacts of climate change.
- Communicate climate change mitigation with a working knowledge of decarbonization technologies and policies developed through weekly reading assignments and peer-grading each other's responses.
- Understand, assess, and debate the link between technology and policy, contemporary climate policy, and the policy-making process.
- Understand the sectors of the economy with the most significant greenhouse gas emissions to assess the complexity and scope of the decarbonization problem.
- Analyze and communicate technologies for decarbonization that are deployable and in need of development through researching case studies in small groups and presenting findings to the class.
- Develop lifelong learning attributes, team skills, and the feeling of empowerment to act on climate change through completing a summative group project.

Grading and Evaluation

- Participation: 20%
  Attendance (10%) and discussion participation (10%). Peer marked.
- Reading reflections: 20%
  200-400 word reading reflections each week, peer-reviewed at the start of class. Complete 80% of the reading reflections over the course of the semester for full marks.
- Midterm: 10%
  Midterm is created and graded by the course-coordinators, and is the one of the only non-peer marked portions of the grade.
- Technology case study: 25%
  Presentation of technological background and lead discussion for one day based on themes from earlier in the course. Peer marked. Max 2 people.
- Final project: 25%
  Research report and poster presentation, answer the question: *"What is something we, as the next generation of engineers, do in our careers to mitigate the impacts of climate change (big or small)?"* 2000 word report and poster presentation.

Report marked by coordinators and faculty sponsor, presentation peer marked. Max 4 people.

Course Syllabus Overview

Week 1: Introductions
Week 2: Causes and scope of climate change (pt. 1)
Week 3: Causes and scope of climate change (pt. 2)
Week 4: Intersections of technology and policy
Week 5: Capitalism and climate change
Week 6: Climate politics; global decarbonization strategies
Week 7: Global and local decarbonization strategies
Week 8: Reading week
Week 9-11: Technology case studies
Week 12: Critiquing capitalism, ecomodernism, technosalvation frameworks
Week 13: Engineering professional agency, climate wealth opportunities
Week 14: Project presentations and course wrap-up

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

For more information, see:
http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,286,0,0