Fall 2019 Syllabus: ENVS 496/302– Special Topics on Climate Change Solutions

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Class time: 17:30-16:45 MW	Classroom: NE-173
Office Hours: 19:00-20:30 MW or by appointment	

Prerequisite

Completion of the General Education requirements in Communication and Critical Thinking and Foundation of Learning II. A., Natural Sciences and Quantitative Reasoning.

Course Description

Climate change narrative, data visualization, mitigation policies, technologies, governance, and actions. Locally and globally scalable solutions for climate changes. Approaches to carbon-neutral societies, optimal applications of climate and natural resources, and human-nature harmonious communities.

Purpose

The purpose of ENVS 496 is to provide students of different majors in arts, engineering, humanities and science with knowledge, quantitative information, and skills to develop solutions to the climate change issues, such as societal transformation solutions, governance solutions, market- and regulation-based solutions, technology-based solutions, science solutions, and big-data solutions.

Course Materials and Pedagogical Approaches

Textbooks

No textbook required for purchase. Core readings are the videos, chapters, and slides entitled "Bending the Curve (BtC): 18 Lectures on Climate Change Solutions" developed by V. Ramanathan, University of California-San Diego, and his BtC team. They are downloadable from the course Blackboard. Also see
https://www.collabra.org/collections/special/bending-the-curve/
https://www.universityofcalifornia.edu/climate-lab
Additional materials customized the SDSU class will also be available to students via the class Blackboard.

Flipped Classroom Learning

This course will require students to read and view the assigned Blackboard course materials prior to class each week, while the class time will be used for in-class discussions of the concepts and questions in the materials, plus the group project of student-proposed solutions. Interdisciplinary discussions will take place both online and in-person, with groups encompassing students from at least two different disciplines, ideally from three disciplines: science, humanity, and engineering.

Course Objectives and Goals

The objectives and goals of this course are to:

- Provide a broad guidance for the students of different backgrounds to develop climate change solutions
- Provide basic data and knowledge on the Earth's climate and its changes
- Engage students with both qualitative and quantitative methods associated with climate studies
- Coach students to write and present climate change solution proposals
- Encourage students to participate in interdisciplinary discussions on climate change solutions

Learning Outcomes

Upon completion of the courses students will

- Know the basic information of the Earth's climate changes and understand the basic idea of human-nature harmony supported by data, information and technology
- Elucidate climate change solution questions under a complex societal structure and in the background of rapid science and technology advancement
- Be able to contribute to developing specific climate change solutions scalable to different societies and communities locally and globally
- Be able to identify opportunities of optimal usage of climate and natural resources
- Be able to prepare and present a proposal to an entity on climate change solutions with a balance of both challenges and opportunities

Policy on Late Work and Attendance

- Late work will be accepted, but its scores will be reduced by 10% per day.
- Class participation is very important for the course grade. Doctor's notes, jury duty and family emergencies are the only acceptable reason for missing a class.

Grading Policy

Tests 1-3	36%
Research paper	20%
Classroom discussion	14%
Final	30%
Total----------	**100%**

Timetable of Tests, Research Paper and Final

	Topic/Assignment
Test 1 (Sept 25, Wed)	Basic knowledge of climate change and solutions
Test 2 (Oct 16, Wed)	Quantitative description of climate change
Test 3 (Nov 13, Wed)	Economic, governing, and technical solutions
Research Paper due Dec 4, Wed)	Research paper due/submission via Blackboard
Final exam: Dec 13/Fri, 1800-2000	Comprehensive final examination, 2 hours

Final grades will be based on three tests and one final exam, and a research paper. Guidelines for the paper will be made available on Blackboard. Your lowest test score (but not the final) will be dropped. There are no makeup exams. If you miss a test, it will be dropped as your lowest score; however, you

cannot drop the final exam. If you are taking the course for CR/NC, you must obtain a "C" grade for Credit. Class grades will be based on the following percent scale:

	A = 100 - 92 %	**A- = 91.99 - 90%**
B+ = 89.99 - 88%	**B = 87.99 - 82 %**	**B- = 81.99 - 80%**
C+ = 79.99 - 78%	**C = 77.99 - 70%**	**C- = 69.99 - 65%**
D+ = 64.99 - 63%	**D = 62.99 - 55%**	**D- = 54.99 - 50%**
	F < 50%	

Use of Blackboard

Blackboard will be used to disseminate and collect information related to the course. Student support for Blackboard is provided by the Library Computing Hub, located on the 2nd floor of Love Library. They can be reached at 619-594-3189 or hub@mail.sdsu.edu

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. You can also learn more about the services provided by visiting the Student Disability Services website.

To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Student Services:

A complete list of all academic support services is available on the Academic Success section of the SDSU Student Affairs website. For help with improving your writing ability, the staff at the SDSU Writing Center is available in person and online.

Counseling and Psychological Services offers confidential counseling services by licensed psychologists, counselors, and social workers. More info can be found at their website or by contacting (619) 594-5220. You can also Live Chat with a counselor http://go.sdsu.edu/student_affairs/cps/therapist-consultation.aspx between 4:00pm and 10:00pm, or call San Diego Access and Crisis 24-hour Hotline at (888) 724-7240.

Academic Honesty

The University adheres to a strict policy regarding cheating and plagiarism. These activities will not be tolerated in this class. Become familiar with the policy and what constitutes plagiarism (http://studentaffairs.sdsu.edu/srr/cheating-plagiarism.html). Any cheating or plagiarism will result in failing this class and a disciplinary review by the University. These actions may lead to probation, suspension, or expulsion. Examples of Plagiarism include but are not limited to:

- Using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work)
- Copying and pasting work from an online or offline source directly and calling it your own
- Using information you find from an online or offline source without giving the author credit

- Replacing words or phrases from another source and inserting your own words or phrases
- Submitting a piece of work you did for one class to another class