

Syllabus for @Climate (SIOC291S) – Summer 2016

The course is designed and led by Dr. Ellie Farahani for Masters of Advanced Studies in Climate Science & Policy Program at UC San Diego Scripps Institution of Oceanography.

Water & Energy

2016 CSP Summer Boot Camp Theme

With the precedent-setting agreement in December 2015 at the United Nations Framework Convention on Climate Change's (UNFCCC) 21st Conference of the Parties (COP21) in Paris, where 195 countries agreed to limit global warming to well below 2 degrees Celsius, climate communication proved to be at the forefront of climate science and policy. Climate science increasingly relies on effective knowledge translation via communication with and engagement of multiple stakeholders to impact government policy and programs, private investors' current and future commitments and strategies, and community based activities aimed at climate change mitigation and adaptation. Climate communication is not limited to diplomatic efforts with relevant audiences and simplification of complex scientific concepts and visualization of scientific data for lay audience but also it encompasses active engagement with stakeholders via knowledge exchange and experiential communication which both have become crucial in climate communication efforts, recognizing the importance of differing agendas and priorities as well as the influence of habits and behaviours on the information that is received and assimilated. In this four-module course students will explore different aspects of climate communication.

Week 1: Introduction

Monday August 1 – Friday August 5

Monday, August 1

- Welcome
- Setting up expectations, grouping students, going over the summer schedule and assignments, including the final project
- History of climate communication
- Discussing the summer theme: Water and Energy

Tuesday, August 2

- Setting up the foundations for social media module
- Defining target audience
- Using data from Facebook to learn about a defined audience
- Creating an audience avatar

Wednesday, August 3

Providing an understanding of the theoretical principles of data visualization to help students to distinguish between “good” and “bad” visual representations, and even between “truthful” and “misleading” visualizations.

Thursday, August 4

- Introduction to the concept of experiential communication.
- Examples of experiential communication.
 - Interventions - aesthetics of doing!
 - Games and scenarios
 - Tactical Media
 - Social engagement
- An overview of methods, tools and materials for creating effective experiences

Friday, August 5

- Editing workshop for climate science and policy
- Writing lay articles for local audience

Week 2: Field trip

Sunday August 7 – Thursday 11 (*Friday August 12 is off*)

A 5-day field trip to LA County to explore different aspects of Earth climate system science, to engage with climate policy organizations, to visit climate change impact and adaptation projects and cleantech in California.

The field trip includes the following activities:

- Frank Gehry's revitalization of LA river project – kayaking tour
- Visiting Jet Propulsion Laboratory
- Visiting California Coastal Commission
- Tour of San Pedro's coastal erosion and corresponding adaptation projects
- Visiting LA cleantech incubator
- Tour of Castaic Power Plant & Energy Storage Hydro
- Tour of Poseidon Water, desalination plant in Carlsbad

Week 3 – Social media

Monday August 15 – Friday August 19

Learning objectives

Bringing knowledge of social media in climate science and policy to the class and providing students with tools to build social media presence, engaging with public and measure their impact.

In this week students learn about the following:

- Blogging: keyword research, writing for the web, setting up their own blog, writing their first article for the blog, and tracking their success
- Twitter: profile, organization, search, status updates and terminology, community, and analytics

- LinkedIn: profile, organization, search, status updates and terminology, community, and analytics
- Instagram: profile, organization, search, status updates and terminology, community, and analytics

On Friday August 19 students present their blog, and social media profiles. Drawing from the SMART objectives they defined on August 2, students will also present a plan of action for their social media efforts. Each student will receive feedback to ensure they are on the right track.

Week 4 – Data visualization

Monday August 22 – Friday August 26

Learning objectives

The goal of this module is to marry visualization design principles with challenges and complexities of climate data, and give the students an overview of the visualization best practices, how they can be adapted or applied in climate science, and potential pitfalls and trade-offs they should be mindful of, while critiquing and comparing different techniques.

In this week students learn about the following:

- Why care about data visualization?
 - Relevance of data visualization in the “big data” era and in the data science pipeline
 - Importance of the human-in-the-loop: there are too many problems which cannot be solved by pure automation
 - Visualization comes in many flavors: exploratory, explanatory, or pure presentation
 - Motivating examples and sample techniques
- Visualization Design Principles: they do exist!
 - It is not *just* about the data, but also about human perception and cognition
 - Discuss principles from Bertin, Tufte, Cleveland and McGill, Colin Ware etc.
 - Principles often get transformed into trade-offs: importance of visualization “tasks”
 - Evaluation strategies- high-level overview with well-known studies
- State-of-the-art in climate data visualizations: why we can and should do *better*
 - Images collected from climate science papers and websites related to climate change
 - Engage the audience about why some of them are bad
 - Going deep into recurring problems and how wrong decisions can be made
- Case Studies About Climate Data Visualization.
 - Data complexity (models, observations, metrics)
 - Techniques: exploratory vs. explanatory
 - Evaluation
 - Benefits

- Take-away and open areas of research

Week 5 – Engaging with policymakers

Monday August 29 – Friday September 2

Learning objectives

Negotiations Section (Monday August 29 – Tuesday August 30)

The objective of this section is to introduce students to the complexity and challenges of the negotiations on climate change and for students to obtain an understanding of mutual gains negotiations and how it differs from traditional approaches.

Changing behaviour section (Wednesday August 31 – Thursday September 1)

The objectives of this section are:

- How to bring a sophisticated appreciation of the roles of culture, physical environment, skills and competence to the design of climate communication programs
- Explore the most likely elements that lead to readiness for change on the part of any particular target population

In this part of the week students explore contrasting approaches derived from psychology and sociology; discuss case studies where behaviour change led to changes in attitudes, knowledge and even values. They also learn about the behavioural change strategies and how they will be linked with policy and social and physical infrastructure encouraging similar resource conservation. Case studies relating to revolving funds for health care and cycling adoption will explore contrasting strategies to engage with specific interests and the broader public, to enable policy and regulatory change in support of resource sparing habits and practices.

Week 6: Technical video editing workshop

Tuesday September 6 – Friday September 9

Learning objectives

The goal of this workshop is to teach students how to use their smartphones as tools for crafting and distributing considered media content. The workshop provides an introduction to media production, including video and audio recording, editing and posting on online platforms. It prepares students to use media as tool of personal expression and an effective form of communication.

Students will use digital video cameras and learn the basics of narrative development. Adobe Premiere Clip, a free video-editing app for iOS and Android platforms, will be used in this workshop.

Week 7 – Experiential communication

Monday September 12 – Thursday September 15

Learning objectives

The goal is for students to learn to design for an impact at the level of human experience rather than at the level of verbal communication. Linking knowledge and action and leveraging creative thinking, these projects set the stage for discussion and dialogue, connecting directly with people's everyday experiences and senses.

The class provides an overview of a broad range of projects designed as public address that use formats such as games, design, photography, video, writing, data visualization and others.

- **Scenario Design:** Students learn how scenario design is used to teach making better decisions in situations with high uncertainty. Students will learn how to structure the task of designing a scenario and how this practice broadens common understanding of current trends and of development of technology. They will practice inhabiting the scenario worlds, and learn how this leads to developing an intuition for acting in the real world.
- **Tactical Media:** Students learn the relationship between media, representation, critical thinking, and design. By understanding media messages as 'tactical,' they will learn to identify social and cultural positions of media-makers. They will be introduced to contemporary practices that subvert or reframe mainstream media messages and discuss the agendas they amplify. By trying their own hand at crafting and distributing alternative narratives they will reflect on the space of agency of a citizen.
- **Social Engagement:** Students will learn how to structure opportunities for social, civic, and cultural engagement where shared and mutual learning can occur. They will develop a crowd-sourced noise-monitoring project and reflect on a framework of participation.
- **Media and communication blog project:** Through using a collaborative blog format, students will experiment with online group dynamics and reflect on the role dynamic plays in many fields. Through class discussion they'll gain insight into cultures of peer review, public vs. private debates, intellectual property, and academic freedom.