

ESM 237 Climate Change Impacts on Hydrology and Ecology

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Class Schedule: Spring 2014

MW, 14:30-15:45

Rm 1424 Bren Hall

Overview

Global climate change will dramatically alter ecosystems, water resources and human systems. Through a series of selected readings, lectures and assignments, this course will present the techniques used to apply science based information to support climate change assessment and adaptation. Assignments and discussion will center on developing the skills needed to extract, analyze, synthesize and communicate information from science-based research in order to effectively adapt to a changing climate. We will look at how current climate and projected future climate trends impact the hydrologic cycle, ecosystems and human resources. A key focus will be becoming familiar with techniques that scientists use to quantify these impacts and to disentangle the multiple causes of variability in observations. We will consider how vulnerability changes across scale and in different locations around the globe and address some of the key issues in making predictions and ultimately planning for continuing climate change.

Schedule

	date	topic
1	28/3/2016	Intro
2	30/4/2016	Climate trends
3	4/4/2016	Climate interpolation
4	6/4/2016	Time Series in R
5	11/4/2016	Mechanistic models
6	13/4/2016	No Class
7	18/4/2016	Conceptual Model
8	20/4/2016	Mechanistic models
9	25/4/2016	Mechanistic models
10	27/4/2016	Empirical Analysis
11	2/5/2016	Meta Analysis
12	4/5/2016	Downscaling
13	9/5/2016	Scenario Generation
14	11/5/2016	Uncertainty
15	16/5/2016	Adaptation
16	18/5/2016	Adaptation
17	23/5/2016	Fire
18	25/5/2016	Option Comparison
19	30/5/2016	Presentations
20	1/1/2016	Presentations

Grading

Data analysis assignments (2) (15*2 = 30)

1-page briefs (2) (15*2 = 30)

Conceptual model (10)

Project Presentation (15)

Project Report (15)