

SC 223 – CLIMATE CHANGE

FALL 2012

Time: Monday & Wednesday, 8:00-9:45 am

Room: Walker Building, Room 229

Instructor: Dr. Cascade Sorte, cascade_sorte@emerson.edu

Office Hours: Wednesday, 1-2 pm in 216 Tremont St., #916 *and by appointment*

Course Description: Climate change is a complex topic of enormous scientific interest, societal importance, and political debate. This course introduces students to the science of climate change and global warming, focusing in particular on: past environmental change, the response of physical and biological systems to recent and ongoing changes in climate, future climate scenarios and public-policy options, and critical evaluation of media coverage of climate-changes issues. (*4 credits, meets the General Education Scientific Perspective requirement*)

Goals (& assessment strategies)

1. Develop an understanding of the causes, patterns, and implications of climate change (*quizzes, workshop assignments, final exam*)
2. Be able to interpret and evaluate the results and presentation of scientific research (*quizzes, workshop assignments, final exam, climate science in the media presentation*)
3. Communicate scientific information in a clear and engaging manner to peers and the general public (*climate change & society project, climate science in the media presentation, workshop assignments*)

Class Participation

It's very important – to your individual and our group success – that everyone:

- (1) attends class (see policy below),
- (2) does the reading (keeping notes of questions and comments),
- (3) regularly contributes questions and ideas during class discussions, and
- (4) encourages and considers everyone else's questions and ideas.

Readings

“The Rough Guide to Climate Change” by Robert Henson, 3rd edition (*available in campus bookstore*)

“Field Notes from a Catastrophe” by Elizabeth Kolbert (*available in campus bookstore*)

“Moral Ground: Ethical Action for a Planet in Peril” edited by Kathleen Dean Moore (*available online at Emerson library*)

Additional readings will be posted on Canvas: canvas.emerson.edu

Grading

39%	Workshop Assignments (14 total; 3% per 13 best scores)
24%	Quizzes (7 total; 4% per 6 best scores)
10%	Climate Change & Society Project
12%	Final Exam
15%	Climate Science in the Media Presentation

Grading Scale (*Emerson-wide*)

A = 4.0 (93-100), A- = 3.7 (90-92), B+ = 3.3 (87-89), B = 3.0 (83-86), B- = 2.7 (80-82), C+ = 2.3 (77-79), C = 2.0 (73-76), C- = 1.7 (70-72), D = 1.0 (60-69), F = 0 (<60). *Grades round up, so that 92.5+ = A.*

Quizzes

Short (10 minute) quizzes will be given in class during 7 class periods (see schedule, below) and will be a mix of question formats such as true/false, fill-in-the-blank, and short essays. Quizzes will assess understanding of the readings and information discussed in class, particularly (but not only, as the concepts are designed to build on each other) from the two previous class periods. Of these 7 quizzes, the 6 best scores will count towards your grade.

Workshop Assignments

Class activities (or “workshops”) will include discussions, lectures, films, guest speakers, activities, readings, and field trips. There will be 14 assignments based on the class workshops (see schedule, below). These workshop assignments will be due either in class (as written or oral responses) or after class (online *via* Canvas). Instructions and deadlines will be given in class and/or on Canvas. Of the 14 workshop assignments, the 13 best scores will count towards your grade.

Climate Change & Society Project

Climate change is becoming a pervasive theme in society – meaning that we “see” it everywhere, from blockbuster films to billboards to casual conversations. The objective of this project is for students to explore some aspect of this societal integration outside of the topics discussed in class – and then share it with the rest of the class in a Wiki format on Canvas. There are four steps to this project (accounting for 10% total of the class grade): propose project (1-3 sentences, submitted as a “quiz” on Canvas; 2%), perform outside activity (after instructor approval of proposal), post an activity report on the Canvas wiki (700-1,000 words, photos or video links encouraged; 6%), and post responses to wiki reports (at least 1 response to another student’s report and 1 response to your own report; 2%). Intermediate deadlines are given on the schedule, below, and the grading rubric will be posted on Canvas.

Project ideas with relevance to climate change: (1) see a play, (2) visit a museum exhibition (e.g., MIT museum’s “Rivers of Ice: Vanishing Glaciers of the Greater Himalaya”), (3) review the topic as found in children’s books, (4) contact/visit with Environmental Massachusetts Research & Policy Center about their public education campaign, (5) interview a group of individuals about their observations/opinions, (6) evaluate ad campaigns, (7) review a set of writings or media reports, (8) participate in a community event (e.g., a Home Energy Coach visit through the Boston Climate Action Network), etc. You may want to talk to friends and family members about how and where they’ve noticed climate change “popping up” for additional ideas.

Final Exam

The final exam on Monday, December 3 will be an assessment primarily of the students’ understanding of central scientific principles discussed during the course. Exam questions will be of similar format and difficulty as the quiz questions. The exam will be designed to take an average of 1 hour to complete. There will be a review session before the exam, and students are encouraged to email Cascade with questions to be addressed during the review.

Climate Science in the Media Presentation

One of the goals of this course is for you to leave better able to critically evaluate science that you encounter on a day-to-day basis. For this presentation (given during the final exam period), students will work in groups of 4 to prepare a short (10-12 minute) Powerpoint presentation exploring the climate science underlying a popular article or news report. During the “Climate change & invasions” class period, an example presentation will be given and specific expectations will be discussed (the grading rubric will also be posted on Canvas).

Class Attendance Policy

Attendance is not required or monitored *per se*; rather, each student is responsible for their participation in the course. Typically, there is a strong positive relationship between attendance, performance (grade), and enjoyment of the course. Because of this, and because the instructor can only help students learn to the degree that they are *present* and *engaged*, students are encouraged to attend class whenever possible.

All quizzes and workshop assignments must be turned in at the designated time. The course grading is set-up to accommodate 2 absences without impact on your grade because the lowest grades on 1 quiz and 1 workshop assignment will be dropped. Please contact Cascade ASAP (via email or in person during office hours) to discuss making up work for planned absences (due to religious observance) or unexpected, documented absences (due to sickness requiring a medical visit or emergencies).

Emerson Attendance Policy

“Students are expected to attend classes regularly and promptly and are responsible for all work done in their classes while they are absent. Individual instructors determine the number of times a student may be absent or tardy before a grade is lowered. In classes where attendance is required, students are responsible for notifying the instructor in advance of unavoidable absences. Students must adhere to individual instructors' attendance policies. Attending an out-of-class activity or event for another course may not be used as an excuse to disregard a given class's attendance policy. A faculty Member may not require a student to attend specified out-of-class activities that conflict with the student's schedule for another class. In addition, Massachusetts state law requires that any student who is unable, because of religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such requirement. The student will receive an opportunity to make up the examination, study or work requirement, which may have been missed because of such absence on any particular day, provided, however, that such make-up examination or work does not create an unreasonable burden upon the College. In any case of prolonged absence due to accident or illness, the student should immediately notify both the Dean of Students and his or her instructors. Under these circumstances the College will make every effort to permit the student to complete course work”

Emerson Disability Statement

“Emerson College is committed to providing equal access to its academic programs and social activities for all qualified students with disabilities. While upholding this commitment, we require all Emerson students to meet the high standards of achievement that are essential to the College's programs and services. To advance these dual aims, the College will provide reasonable accommodations to disabled students who request accommodations through the College's Disability Services Office (DSO), if the DSO determines that accommodations are both medically necessary and reasonable. Please note that a requested accommodation will only be approved as 'reasonable' if it does not compromise any essential requirements of a course. Students who wish to request a disability accommodation must submit their request to the DSO, and not to faculty, since only the DSO is authorized to approve or deny any requests for accommodations. College employees and student's family members cannot request accommodations on a student's behalf. Rather, students who wish to request accommodations must themselves contact the DSO since Emerson's philosophy is that its students are independent and self determined and students with disabilities—like non-disabled students—have control over their lives here at Emerson and are ultimately responsible for making their own decisions. Students who know at the start of a semester that they will need accommodations must submit their accommodation requests to the DSO within the first two weeks of the semester. If a student becomes ill or disabled during the course of a semester, or discovers after the start of a semester that he or she needs a disability accommodation, he or she is encouraged to submit his or her request to the DSO as soon as possible since the process of approving accommodations takes time, and approved accommodations will not be granted retroactively. The Associate Director for Disability Services can be reached at: 617-824-8592, dso@emerson.edu, 5th Floor 216 Tremont Street.”

Emerson Plagiarism Statement

“It is the responsibility of all Emerson students to know and adhere to the College's policy on plagiarism, which can be found at: http://www2.emerson.edu/academic_affairs/policies/Plagiarism-Policy.cfm. If you have any question concerning the Emerson plagiarism policy or about documentation of sources in work you produce in this course, speak to your instructor.”

Schedule (*subject to change*)

Date	Topic	Readings	Assignments
W, 9/5	Overview: the course & the issue		
M, 9/10	Principles of climate & the greenhouse Earth	"The greenhouse effect" & "Who's responsible"	WA 1
W, 9/12	Film: "An Inconvenient Truth"	FNC-1 & 2	
M, 9/17	Historical climate patterns	"The long view"	Quiz 1
W, 9/19	The scientific method (<i>bring notebook & wear clothes for time outside</i>)		WA 2
M, 9/24	Changes in climate setpoints	"Keeping track"	Quiz 2
W, 9/26	The big melt	"The big melt"	WA 3
M, 10/1	Film: "The Day After Tomorrow"	FNC-3	Climate Change & Society proposal due
W, 10/3	Extreme heat, floods & droughts	"Extreme heat" & "Floods and droughts"	Quiz 3
T, 10/9	Storms & climate change	"Hurricanes and other storms"	WA 4
W, 10/10	Writings (& reading) about climate change	FNC-5	WA 5
M, 10/15	Discussion with a Scientist: Climate change & clean air - Emily Fischer (Harvard Univ.)	Paper TBA	Quiz 4
W, 10/17	Interactions & impacts	"Ecosystems and agriculture", FNC-4	WA 6
M, 10/22	Changes in the oceans	"Oceans", FNC-6	WA 7
W, 10/24	Predicting the future	"Circuits of change"	Quiz 5
M, 10/29	A heated debate	"A heated debate"	WA 8
W, 10/31	Climate change & invasions	Sorte et al. 2010 Ecology	Quiz 6
M, 11/5	Global carbon sources & politics	FNC-7 & 8	WA 9
W, 11/7	Global solutions & (more) politics	"The Predicament" & "Political solutions"	WA 10
M, 11/12	~ No Class: Veteran's Day Holiday ~		
W, 11/14	Individual climate footprints & local solutions	"Part 5: What can you do?", FNC-9	WA 11; Presentation groups & articles due
M, 11/19	Film: "The 11th Hour"		Last day to post activity report
W, 11/21	~ No Class: Thanksgiving Holiday ~		
M, 11/26	Communicating climate science	FNC 10 & "Afterword"	WA 12; Last day to post wiki replies
W, 11/28	Scientific synthesis & exam review session		Quiz 7
M, 12/3	Final Exam		Final Exam
W, 12/5	Moral Ground	TBD from "Moral Ground"	WA 13
M, 12/10	Discussion with a Philosopher: Ethics of climate change - Lauren Hartzell Nichols (Univ. of Washington) <i>via</i> Skype	Gardiner 2009 WIREs Climate Change	WA 14
Th, 12/13 8-10 am	Climate Science in the Media Presentations		Presentations

Readings noted above are chapters from "Rough Guide" (in quotes), "Field Notes from a Catastrophe" (FNC), or papers to be posted on Canvas. WA = Workshop Assignments.