

UNIVERSITY OF SOUTHERN CALIFORNIA
Environmental Studies Program
Fall 2015

ENST 320a: Water and Soil Sustainability
TTH 11:00-12:20 pm, VKC 101

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Course Overview

Both water and soil are integral to human livelihood, and both are currently under threat. This class presents an overview of the issues related to water and soil sustainability including soil development and management, the hydrological cycle, the cycling of nutrients through both soil and water, soil and water pollution, and food security related to soil and water issues. **Recommended prerequisite: ENST 100**

Course Texts

1. Pennington, Karrie L. and Cech, Thomas V., Introduction to Water Resources and Environmental Issues, 457 pp., Cambridge. Referred to below as WREI
2. Plaster, Edward J., Soil Science and Management, 495 pp., Delmar-Cengage. Referred to below as SSM

Course Requirements

Routine attendance and active participation are an important part of each class session. For the best learning experience, you are expected to have read the course materials (see below) by the date it is discussed in class. Roll will be taken periodically in the form of thought exercises, reading assignments, and in-class questions. You are responsible for information, announcements, date changes, and any other course material presented, regardless of your participation in the classroom.

Course Grading

You will be graded on the basis of your performance on exams, written assignments, group presentation, and class participation (e.g., study guide discussions, Blackboard assignments, etc.). Lecture presentations will be posted on Blackboard after the lectures. Exam questions will be drawn from course readings and lecture materials, and will include both multiple choice and essay questions. The Final Exam is partially cumulative and will include ~20% of material covered in the first two-thirds of the course; the remaining ~80% of the Final Exam will include only material covered after Exam 2 (i.e., the last third of the course). ***No make-up exams or assignments will be allowed without explicit permission.*** If a student misses an exam and/or assignment, they will receive a zero for that portion of the course.

Below is a list of the graded assignments and their point value:

Midterm 1	Sept 17	100 pts	20%
Midterm 2	Oct 20	100 pts	20%
Final Exam	Dec 15	125 pts	25%
Science Blog	Sept 15	25 pts	20%
Letter to Gov't Official	Oct 1	25 pts	5%
Op-Ed Letter	Oct 15	25 pts	5%
Soil Data Report	Nov 3	25 pts	5%
Group Project	Dec 1-3	50 pts	10%
Reading Guide Discussions (6 total)	Rolling	24 pts	5%
Total Points		499 pts	100%

Written Assignments & Group Project

Each student is required to submit 4 separate written assignments related to water and soil sustainability (science blog, letter to government official, op-ed, soil data report; due dates, and point values outlined above). This is not a group project – each student is responsible for developing, writing, and submitting their own assignment. Specific criteria and guidelines for completing each of these assignments are available on Blackboard in the ‘Assignments’ folder. At the end of the semester, students will work together on a specific topic, which they will deliver as an oral presentation (see above for dates and point value). A list of topics to choose from will be discussed in class and made available on Blackboard (along with project instructions and guidelines). The goal of the written assignments and group project is for students to research an environmental issue using the primary literature as well as other reputable sources, take an informed position on a given issue based on available information, and present their position to either a general or specialized audience. All submissions will be evaluated for originality, accuracy and thoroughness of research, attention to detail, and quality of finished project.

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>. Neither discrimination, sexual assault nor harassment is tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity <http://equity.usc.edu/> or to the Department of Public Safety <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential-support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources. Students are expressly prohibited from recording lectures.

Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Statement on Religious Observation Accommodations

USC policy grants students excused absences from class for observance of religious activities. Students may be given an opportunity to make up work missed because of religious observance. We are responsive to requests for an excused absence when made in advance. Please note that this applies only to religious activities that necessitate a student’s absence from class and/or a conflict with a specific aspect of the course.

Course Schedule

For the best learning experience, you are expected to have read assigned material by the date it is discussed in class. Chapter and article readings will be posted online. The readings and schedule of topics may be adjusted throughout the semester depending on the progress of the class.

Date	Topic	Readings
Aug 25	Sustainability & Wicked Problems (DG)	WREI Ch. 1, SSM CH. 1, See Bb
Aug 27	Water as a Chemical (DG) Wicked Problems Reading Discussion	WREI: Ch. 4
Sept 1	Hydrosphere, Hydrologic Cycle (JS)	WREI: Ch. 3
Sept 3	Watersheds, Water Supply I: Topo Maps & Watershed Delineation (JS)	WREI: Ch. 5
Sept 8	Watersheds, Water Supply II: Topo Maps & Watershed Delineation (JS) Article 1 (Gleick) Reading Discussion	WREI: Ch. 5
Sept 10	Soil Science & Applications (DG) SCIENCE BLOG ASSIGNMENT DUE	SSM: Ch. 2, 4
Sept 15	Soil Management & Adaptations (DG) Article 2 (Amundson et al.) Reading Discussion	SSM: Ch. 6
Sept 17	MIDTERM 1	
Sept 22	Soil Health Activities in Lab & Field I (DG & JS)	Lab manual, See Bb
Sept 24	Microbiology I: Microbes & Soil Food Webs (JS)	SSM: Ch. 5
Sept 29	Water Dynamics of Surface & Subsurface Water, Groundwater contamination (JS) LETTER TO GOV OFFICIAL ASSIGNMENT DUE	WREI: Ch. 6, SSM Ch. 7, See Bb
Oct 1	Water Dynamics of Surface & Subsurface Water, Groundwater contamination (JS)	WREI: Ch. 6, SSM Ch. 7, See Bb
Oct 6	Wetlands (JS) Article 3 (Barbier et al.; Valiela and Fox) Reading Discussion	WREI Ch. 9
Oct 8	The Nitrogen Cycle (JS)	SSM Ch. 10, 12, See Bb
Oct 13	The Carbon and Methane Cycles (JS) OP-ED LETTER ASSIGNMENT DUE	SSM Ch. 12, See Bb
Oct 15	Other Nutrient Cycles: Overview & Synthesis (JS) Article 4 (Cordell) Reading Discussion	SSM: Ch. 10, 12
Oct 20	MIDTERM 2	
Oct 22	Soil Health Activities in Lab & Field II (DG & JS)	Lab manual, see Bb
Oct 27	Water Usage, Treatment, Quality I (DG)	WREI: Ch. 11
Oct 29	Microbiology II: Fecal Indicator Bacteria (DG) SOIL DATA REPORT DUE	See Bb
Nov 3	Water Usage, Treatment, Quality II (DG) Article 5 (Grant et al.) Reading Discussion	SSM: Ch. 8
Nov 5	Agriculture & Food Security I: Background & Overview (DG)	SSM: Ch. 16, 18
Nov 10	Agriculture & Food Security II: Applications (DG) Article Reading 6 (Oliver and Gregory) Reading Discussion	SSM: Ch. 19
Nov 12	Sustainable Fisheries I (DG)	See Bb
Nov 17	Sustainable Fisheries II (DG)	See Bb
Nov 19	Coastal Pollution and Eutrophication (JS)	See Bb
Nov 24	TBA	
Nov 26	THANKSGIVING BREAK, NO CLASS	
Dec 1	Group Presentations	
Dec 3	Group Presentations	
Dec 15	FINAL EXAM, TUESDAY 8:00 – 10:00 AM, VKC 101	