



Environmental Science and Policy 400 Capstone Project – Spring 2014

College of Liberal Arts & College of Natural Sciences and Mathematics

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Course Meeting Times:

Lecture: Fridays 10-11:50 a.m., PH1-219

Field Work / Laboratory: Fridays 12-2:45 p.m., PH1-231 and field sites (see schedule for details)

Required Overnight Field Trip Friday-Saturday March 7th-8th

I. Goals and Objectives

This course is an interdisciplinary evaluation of the physical, biological, social, economic, and legal dimensions of local environmental issues. The overarching goal of this class is to practice the integration of natural and social science and environmental law and policy.

Soecific learning objectives include:

- work with other students and faculty as part of an interdisciplinary team with the faculty as principals in the "consulting firm" and the students as staff members
- initiate lines of inquiry to help solve a real world problem.
- evaluate policies and propose alternatives that impact ecosystems in the region.
- understand the need for an interdisciplinary approach to problem solving.
- present written arguments, oral arguments, scientific findings, and research results that could be used by the public or legislative bodies, regulatory agencies, or courts.

II. Course Requirements

A. Recommended Texts:

- Hay, Iain. 2003. *Communicating in Geography and the Environmental Sciences*. Oxford University Press. This is a useful general guide for writing reports, papers and for making presentations.
- McCaskill, Mary K. 1990. *Grammar, Punctuation, and Capitalization: A Handbook for Technical Writers and Editors*. NASA Special Publication 7084. National Aeronautics and Space Administration. Available from <http://www.sti.nasa.gov/sp7084/contents.html>. Covers all the nuts and bolts of writing mechanics.

B. Assigned Reading: Assignments will be posted on BeachBoard. You are responsible for checking BeachBoard each week. Students will be expected to complete reading without reminders.

C. Study Sites: The focus is on two sites where California Sage Scrub is the predominant plant cover but where there are also areas of riparian vegetation and invasive annual grasses. Sites are located in the Santa Monica Mountains near Malibu and Pt. Mugu. Additionally, the campus itself offers opportunities for integrated archaeological and biogeographical research.

D. Overview: California sage scrub (CSS) is a highly threatened vegetation community in coastal Southern California, 90 percent of which has been lost. Understanding CSS recovery is critical to its survival. We will work

in one or two valleys (La Jolla and Serrano) that have experienced long periods of anthropogenic disturbance including grazing, cultivation, and mechanical disturbance (disking), as well as sustained use by the Chumash people. These disturbances have resulted in the invasion of many exotic grasses, which now dominate parts of the landscape. We have multiple data sets for the study areas including a long-term series of air photographs and recent vegetation map. These data indicate that in some (but not all) areas native species are making a comeback. To make things really interesting, **the entire area burned in a hot fire last May**. The two valleys include seasonal streams and riparian vegetation, which also burned, setting up a unique opportunity to study the effects of a hot fire on streams and vegetation cover. The Park Service reports that fires also exposed a series of shell middens hidden under coyotebrush. Coyotebrush (*Baccharis pilularis*) is a native species that seems to display traits of an invasive species but which also serves as a pioneer species and a kind of nursemaid species leading CSS reclamation of exotic grassland. So, this finding of coyotebrush in association with Chumash middens is intriguing!

Pt. Mugu State Park is located in Ventura County and, thus, travel time can take about two hours. Lab and field activities will normally occur on LONG DAYS on Friday. We cannot predict the exact time of return to campus so plan accordingly. YOU ARE EXPECTED ON FIELD DAYS TO DRESS APPROPRIATELY (clothes that can be dirtied, closed-toed shoes, hats, gloves, etc). You should expect to get wet, muddy, dusty, achy, and tired. These are **steep** coastal areas with **dense riparian** vegetation. For week 7 we will have a **2-day field trip and spend the night at a camp-site in Pt. Mugu**. During the latter 8-9 weeks, you will work within your team on your projects relatively **independently** with varied levels of faculty assistance. You should expect to work odd hours (BE FLEXIBLE). You will be working with a team and expected to respect your colleagues' time and work.

III. Responsibilities

You are responsible for attendance and participation in all team meetings. Participation requires you to come prepared, having read and completed all assignments. Assignments will include multiple exercises (see Course Schedule on final page for details) and regular work reports. In addition, each team prepares a research proposal that includes the methods they plan to use for the collection and analysis of data, executes the proposed project, and then writes up findings and conclusions in a final report and oral slide-based presentation (PPT, Impress, Prezi).

IV. Grading Scheme

The course outcomes are measured in a series of individual assignments. These include lab and field exercises, regular work reports, and participation, as well as team-based assignments, including project proposals, oral presentations, final reports, and other products.

- A. 10% -- Plant ID and transect
- B. 5% -- Cover letter and résumé
- C. 10% -- Puvungna field project
- D. 65% -- Team research projects, which include:
 - 1. Problem Statement (5%)
 - 2. Methods (5%)
 - 3. Final Project Proposal (10%)
 - 4. Final Project Report (35%)
 - 5. Final Oral Presentation and viewgraphs [Team and Individual] (15%)
- E. 5% – Participation

Team research project details

1. *Project proposals must include the following:*

- a) **problem statement:** what question(s) will the proposed project's results answer? why is it important?
- b) **methodology:** what you propose to do, where you propose to do it, when you will do each portion and who will do it, why you are doing it this way, how (methods for data collection and statistical/GIS/qualitative analysis of data), and plans for integration with other teams.
- c) **integration statement:** plan of how proposed project will integrate across environmental disciplines (e.g., ecology team utilizing environmental history or archaeological team utilizing biogeographical data or ...).

- d) **policy relevance:** explanation of how project applies to actual environmental policy decision(s) surrounding the study areas or similar conservation efforts.
- e) **references:** literature review of relevant work done by previous classes or published, references used in determining your methodology, and those sources specific to the study areas that bear on your proposal.
- f) **preliminary observations and hypotheses:** the beginnings of your introduction section including what your team has learned from staff meetings, field visits, and consultations with the team principal. (See BeachBoard for more details)

2. Final written report:

Our goal is to have each group complete an original and comprehensive final report with contributions from each team member. Each section written by the teams should have a brief introduction. Each report should have the following sections: introduction, data and methods, results, discussion, and conclusions. Grading is based upon (i) demonstration of how the individual work integrates two or more disciplines to form an interdisciplinary analysis; (ii) analytical depth; (iii) contribution toward potential solution of an environmental problem; (iv) organization, structure, and professionalism of final document. A detailed rubric will be posted on BeachBoard.

3. Oral presentations:

Final presentations (10-15 minutes) will be delivered by the ENTIRE team; therefore, each team member will be expected to speak. Overall team presentations will be evaluated for professional quality as well as visual aids and time management. Each presenter's performance will also be evaluated individually.

V. Course Policies

Absences and Tardiness

You must be on time for all class meetings and turn in all assignments by the required due dates. Absences are extremely difficult to overcome, especially field days. Your "pay" (grade) will be docked for every absence and late arrival. Please notify us well in advance of schedule conflicts due to an excused absence (see http://www.csulb.edu/divisions/aa/catalog/current/academic_information/class_attendance.html). For non-emergency absences, students should arrange to turn in any assigned work on the due date. Late assignments for unexcused absences will be docked 10% and must be received by the next class period (within one week) or they will not be graded (0 points).

Transportation

CSULB requires all drivers (*i.e.*, their cars) be insured for a minimum of \$15,000 personal injury for 1 person, \$30,000 for personal injury for 2 or more persons, and \$5,000 for property damage. Cars driven by students on field trips must be properly registered, insured, and equipped with working seat belts for the driver and each passenger. Please bring your license, current registration, and proof of insurance to class the day before you plan to drive to a field site.

Accessibility Policy

It is your responsibility to notify the instructors as soon as possible if you need accommodation for a disability that has been verified by the University, so that we can make appropriate arrangements ahead of time. Refer to the Disabled Student Services website for more detail and useful resources: <http://www.csulb.edu/depts/dss/>.

University Withdrawal Policy

If you decide not to complete this course, it is your responsibility to withdraw. Failure to withdraw will result in a grade of "WU" (unauthorized withdrawal). During the final three weeks of instruction, withdrawals are not permitted except where circumstances causing withdrawal are clearly beyond the student's control and the assignment of an incomplete is not practical. Ordinarily, such withdrawals involve total withdrawal from the university. Refer to the Schedule of Classes for applicable deadlines.

Academic Conduct

Academic dishonesty of any kind will not be tolerated. This includes plagiarism (using the ideas or work of another person or persons as if they were your own, without giving credit to the source), copying others' assignments, or submitting work prepared by you for another course. Such academic offenses may result in no credit for an assignment, a grade of "F" in the course, or referral to Judicial Affairs. See CSULB policy at: http://www.csulb.edu/divisions/aa/catalog/current/academic_information/cheating_plagiarism.html

ES&P 400 Tentative Meeting Schedule and Assignment Due Dates

Week	Date	Lecture	Lab/Field	Assignments Due	Notes
1	Jan 24 th	Course introduction and requirements. Résumé and cover letter skills (All).	Discuss study topics and sites. Plan first trip.	Fill out campus travel paperwork.	
2	Jan 31 st	Disturbance and CSS (Rodrigue and Langdon).	Palos Verdes Peninsula Site Visit. Long Day!		
3	Feb 7 th	Archæological issues on campus, cultural resource management (Lipo).	Visit Puvungna. Tour IIRMES.		
4	Feb 14 th	Introduce research projects in the field (Rodrigue, Langdon, Lipo).	FIELD SITE VISIT VERY LATE DAY!	#1 Plant ID and transect work due	Bus transportation provided
5	Feb 21 st	The fungus among us (Mills, Rodrigue, Langdon)	Lab day: soil and fungus.	#2 Survey, cover letter, and résumé due	
6	Feb 28 th	ESA, NCCP and CSS (Langdon and Rodrigue); Arrange field transport	Plant biology [in class, short] (Langdon).	#3 Archæological assignment due	Announce teams; bring lic/reg/ ins
7	Mar 7th-8th	OVERNIGHT DATA GATHERING TRIP (All)	OVERNIGHT DATA GATHERING TRIP (All)	#4 One page concept paper due in Dropbox by Sunday, Mar 9 th	Campsites provided
8	Mar 14 th	Scientific ethics and proposal writing workshop (Langdon and Lipo; Rodrigue @ AEHS)	Work in teams on research methods and design and problem.	#5 Team expanded data and methods statement due (1-2 pp.)	
9	Mar 21 st	Work in teams to critique preliminary proposals and develop ideas for proposal Integration among teams	Work in teams on work plans following peer critiques	#6 Preliminary proposal due and distributed for discussion	Peer feedback on preliminary proposals
10	Mar 28 th	Team meetings: Role selection	Field/lab team research. Off to work!	#7 Final proposal due	Faculty feedback on proposals e-mailed
11	Apr 4 th	SPRING BREAK	SPRING BREAK	Suggestion: Collect data ...	
12	Apr 11 th	Independent teamwork in field, lab or class	Field/lab team research	Collect data	Faculty check in
13	Apr 18 th	Independent teamwork in field, lab or class	Field/lab team research	Process/analyze data, plan data visualization	Faculty check in
14	Apr 25 th	Meet with teams in class; then field or lab	Begin to assemble final report	Write up/critique drafts of each section, prepare tables, maps, graphs	Faculty check in
15	May 2 nd	Meet with teams in class; then field or lab	Begin to integrate final report	Prepare report	Faculty check in
16	May 9 th	Meet in class (ALL)	Prepare and practice oral presentations (ALL)	#8 Final report due (and your "staff evaluations")	Faculty check in
Final	May 16 th	Oral presentations	Oral presentations	#9 Oral presentation / viewgraph show due	Exam period: 10:15-1:15