

ENST 495: Senior Seminar

Units: 4

Spring 2018, Fridays, 2 hours -time TBA

Location: TBA

Instructor: Jill Sohm

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Office Hours: TBA

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Course Overview

This year, senior seminar is going to focus on the ecosystem service functions of biodiversity and native habitat along with the science behind genetically modified organisms. We will examine Southern California as our case study for native habitat diversity, particularly on the (relatively) pristine Channel Islands- Catalina and Santa Cruz. We will discuss these unique ecosystems, and the problems they face with a burgeoning population of 18 million Angelinos in close proximity. As we face increasing threats from climate change including water shortages, we will put GMO's and biodiversity in context here in California where a whopping 40% of the table food for the USA is grown.

Learning Objectives

- Understand the natural history of California and the changes humans have made to the landscape, particularly with regard to water and agriculture
- Gain knowledge on the importance of biodiversity and it's interaction with agriculture
- Explore in depth the topic of genetic modification, specifically with regards to food, and learn how GM technology affects agriculture and biodiversity in the environment
- Learning objectives in this course are aligned with those of the Environmental Studies Program: <https://dornsife.usc.edu/environmental-studies/learning-objectives/>

Course Notes

This course will use Blackboard for communication, information and turning in assignments. Lecture slides will be made available after the lecture is given. Additional readings may be assigned periodically throughout the semester, and these will be announced in class, posted on Blackboard, and an email reminder sent to the class. Sometimes computers will be used in class to work with real life data in excel and run simple simulations – students will be notified when computers are needed. This course involves a lot of in depth reading and critical analysis outside of lecture, as it is a four unit course.

Required Readings and Supplementary Materials

All course readings will be posted on Blackboard

Description and Assessment of Assignments

Reading Guides:

Each week's reading will have a corresponding reading guide that will be posted on blackboard one week before the reading is due. In order to receive a grade for class seminars, you must come to class prepared with the appropriate readings finished, evidenced by completed reading guides and/or the reading marked as such with highlighting, comments, and/ or questions. You can do this by printing the paper out OR using adobe software to mark the pdf. Reading guides will be posted a week before class and you are required to download them and complete them.

Plant maps:

All students will be required to build a Google Earth map of a hike with native plant locations/pictures/details included. We will create the first map as a class on Catalina, and the second you can create in pairs from data and images we collect on Santa Cruz Island. Map images will include the common name, the scientific name, that plant status (native, endemic, invasive), identifying features, and one fun fact. Students will be given a list of the native and non-native plants most commonly found on the islands, which they can work from.

In Class debate:

We will have a debate in class on whether or not we should label genetically modified foods. For this debate, you will be assigned randomly to a position and each do your own research, turning in a short summary with references. In class, you will meet briefly with your group, select representatives, and hold a debate with opening remarks, rebuttals, and a period for answering questions.

Final project:

For the final project you will produce either an ESRI Storymap or a 5-10 minute podcast with a partner. The topic should relate to Genetic Modification technology or issues of biodiversity and agriculture. The goal of this project is to explore a topic that we didn't cover in class, and also learn about new ways to effectively communicate stories to the public. You will turn in the topic for your project by the middle of the semester and meet with your professor once to discuss your project and progress.

Exams:

There will be two midterm exams for this class. Exam questions will be drawn from course readings and lecture materials, and will include both short and long essay questions which require students to critically analyze course readings and draw from class discussions and field trips. Identification of plant species from Catalina and Santa Cruz Islands will appear on midterm exams. Both exams are midterms. **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. During exams, students will NOT be allowed to have notes, books, cell phones, etc. Only pens/pencils and a calculator are required. Failure to comply with exam policies will automatically result in a grade of "0" for that particular exam.

Attendance/participation:

Attendance is mandatory and will be taken at each class meeting. Missing a field trip will result in failure of the course. Students may have **one** unexcused absence without facing a grade penalty. Each unexcused absence after the first unexcused absence will result in the lowering of the final grade by 1/3 of a letter grade. Participation is 10% of the grade. You are expected to come to class prepared and contribute to the discussion (see Reading Guides section above).

Grading Breakdown

Assignment	Points	% of Grade
Midterm 1	50	25
Midterm 2	50	25
Plant maps	30	15
Class debate	10	5
Final project	40	20
Participation	20	10
TOTAL	200	100

Grading Scale

Course final grades will be determined using the following scale

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

Additional Policies

If there is a conflict with an exam, you must email the instructor *2 weeks in advance* to see if arrangements can be made (under reasonable circumstances). Otherwise, make-up exams will not be given except in extreme emergencies. Make-up exams will also be more difficult, so it is in your best interest to take the exam on the day it is scheduled. If you have an emergency on exam day, you must get in touch with us before the exam if possible. Assignments will not be accepted late. Additionally:

- Come to class prepared
- Be respectful of me and other students in class
- Please leave cell phones outside the classroom or turned off
- If you have to miss class, make sure you arrange to get notes and announcements.

Field Trips

The course will include an overnight trip to Catalina Island, a weekend trip to Santa Cruz Island, and a day-trip to a sustainable farm in Moorpark. Field trips are a mandatory part of the course, as such you must attend all three trips, and failure to attend a field trip will result in a grade of F in the class. Students are required to wear closed-toe shoes on all boats. During the field trips, you will be engaged in intense seminars with the participants of the class and by USC faculty associated with the Wrigley Institute for Environmental Studies, doing environmental field

research on the island, as well as some fun recreational activities. While on Catalina Island, you will have a room in the USC dormitory and meals in the cafeteria. While on Santa Cruz Island, you will have a room or be camping at the UCSB field station and we will cook communal meals together at the same facility. During the field trips there will be a significant component of fieldwork. In the field students must wear either athletic shoes or hiking boots. Hiking boots are strongly recommended. Students are also encouraged to wear pants, long-sleeved shirts, hats & sunglasses for sun protection and protection against poison oak & poison ivy. If there is any reason that you might not be able to deal with the physical demands of the field trips, please come speak to me so that alternative plans can be made.

Student Conduct

Field trips are mandatory and represent a significant component of this class, which places a significant responsibility on safety and conduct. While we are off campus on course-related field trips the following activities will not be permitted:

- no use of tobacco***
- no substance abuse will be tolerated***
- no consumption of alcohol***

The trip to Catalina Island will involve intense academic programming from the time we reach the island Friday morning through Friday evening and all day Saturday, as well. For this reason students will not be permitted to travel to the dining establishment in Two Harbors. Students will be required to attend a class meeting immediately following breakfast (8am) Saturday and be alert and ready for the day's activities. Any significant violation of these policies will be reported to the student conduct office and to all other applicable entities as well.

Course Schedule: A Weekly Breakdown

Date	Topic	Reading
Jan 11	Introduction, California and Channel Islands natural history, the Intrinsic Value of Biodiversity, Water in California	<i>Cadillac Desert Intro, Sandler, 2012; Myers 2012; Water and Power pp. 19- 40</i>
Jan 18	Water and Agriculture in California	<i>Cadillac Desert- Chinatwon (ch 10; Water and Power pp. 40-59</i>
Jan 25	Climate Change, Agriculture, and Water in California; Relationship of biodiversity and agriculture	<i>Hayhoe, et al. 2004, CA Agriculture Statistics, Tschardt et al. 2005</i>
Feb 1-2	<i>Catalina Overnight Trip- Catalina native plants, GPS and mapping</i>	<i>https://www.google.com/earth/outreach/tutorials/annotate.html</i>
Feb 8	Introduction to GMOs	<i>Signal to Noise GMO edition: intro; FAO intro to Mo.Bio and bioengineering; Forabasco 2013</i>
Feb 15	Regulation of GMOs (role of government in GM technology)	<i>Signal to Noise GMO edition: regulation; Lynch and Vogel 2001 (through regulation in US and EU),</i>
Feb 22	Environmental risk of GMOs	<i>Signal to Noise GMO edition: genetic diversity; Ellestrand 2003; Ellestrand 2006; Ryffell 2014</i>
Mar 1	<i>Midterm I</i>	
Mar 8	Health Risks of GMOs	<i>Seralini 2012, Van Eenennaam 2014, Nicolia 2014, Hilbeck 2015</i>
Mar 15	<i>SPRING BREAK</i>	
Mar 22	GMO crop outcomes: Do they increase yields, reduce pesticide use, and reduce costs?	<i>Lu 2012; Tabashnik 2013; Klumper 2014; Gilbert 2014; NYT article</i>
Mar 29-31	<i>Santa Cruz Island Field Trip</i>	<i>Roemer 2002, Morrison 2013</i>
April 5	Agribusiness, Monsanto, and NGOs <i>Santa Cruz plant map KMZ files due</i>	<i>Gutierrez 2015; Democracy Now and Genetic Literacy Project articles; History of Agribusiness</i>
April 12	Should GM products be labeled? (Class debate); Affect of organic farming on biodiversity & Conservation Agriculture	<i>Research on your own (come in with your citation list) CA response (in class)</i>
April 19	<i>DAYTRIP Underwood Farms (Moorpark)</i>	<i>Reganold 2016; IFOAM GMO Position Paper; Marchman 2105</i>
April 26	<i>Midterm II</i>	
Final	<i>11-1pm: Storymap and podcast presentations</i>	

Statement on Academic Conduct and Support Systems

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 Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. 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>.

Support Systems:

Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

National Suicide Prevention Lifeline – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs

Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

Student Support and Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.

Provides overall safety to USC community. dps.usc.edu