

ENST 495: Senior Seminar
Units: 4
Spring 2021, Fridays, 12-2PM

Location: Online/Zoom

Instructor: Jill Sohm
Office: Zoom
Office Hours: by appointment at https://calendly.com/jill_sohm
Email: sohm@usc.edu
Phone: 818-824-4296 (Google Voice)

Classroom ground rules

- Share responsibility for including all voices in the conversation.
- Listen respectfully.
- Be open to changing your perspectives based on what you learn from others.
- Understand that we are bound to make mistakes in this space.
- Understand that your words have effects on others.
- Take pair work or small group work seriously.
- Understand that others come to these discussions with different experiences from yours.
- Make an effort to get to know other students.
- Understand that there are different approaches to solving problems.

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. In addition to turning these in, you will find one paper of your own that you will write a short paragraph on, and then summarize it for the class on Fridays.

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 work with the other section of ENST 495 to learn to create the maps, and for those in the LA area that would like to, we will meet at the CA Science Center garden to identify and map plants there. Those in other locations will create a map for their local area, ideally displaying native plants. The second assignment will involve turning your Google Earth map into a Google Tour that can be used as a simple education tool. To complete this assignment, you will learn about GPS data logging, plant identification using iNaturalist, and simple GIS mapping.

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.

Policy brief:

By the end of the class you will hopefully have a fuller picture of the American agricultural system and how GM technology fits into it. You will use this background to decide on an issue you think could be effectively solved through policy and create a 2 page policy brief outlining the problem you are interested in and the policies you think could help resolve it.

Final project:

For the final project you will produce 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. We will listen to the final products during the final exam time

Exams:

There will be one take home midterm for this class. It will be an open note essay that you will complete on your own. Late submissions will not be accepted.

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
Reading Guides	25	13%
Paper summaries	15	8%
Midterm	30	15%
Google Earth plant map	20	10%
Google Tour plant map	15	8%
Class debate	10	5%
Policy Brief	30	15%
Final project	40	20%
Participation	15	8%
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.

Course Schedule: A Weekly Breakdown

	Videos to watch before class	Live/in person class (12P Fri)	Readings and Homework	Deliverable/ Due Dates
Jan 15	Introduction, California natural history, Water in California	Discussion of readings	Myers 2012; Tending the Wild Ch 4 (125-127, 134-154); Water and Power pp. 19- 40	Reading guide
Jan 22	Water and Agriculture in California	Discussion of readings	Cadillac Desert Ch 10; Tending the Wild Ch 5 (155-162,165-169,174-179,185-186); Water and Power 40-59	Reading guide
Jan 29	Climate Change, Agriculture, and Water in CA; Relationship of biodiversity and agriculture	Discussion of readings	Hayhoe, et al. 2004, CA Agriculture Statistics, Tscharntke et al. 2012	Reading guide
Feb 5	How to use iNaturalist, GPS tracks	GPS plant mapping		Takehome midterm I
Feb 12	Using Google Earth for plant mapping	Discussion of readings Extra time: mapping (with other section, 10-12 or 2-4)	Human alterations of ecosystems and their restoration	Reading guide
Feb 19		Introduction to GMOs Discussion of Forbosco	Signal to Noise GMO edition: intro; FAO intro to Mo.Bio and bioengineering; Caballero-Hernandez et al. 2020	Reading guide Plant map
Feb 26		Regulation of GMOs (role of government in GM technology)	Signal to Noise GMO edition: regulation; Lynch and Vogel 2001 (through regulation in US and EU)	Reading guide + sum. of related paper
Mar 5	Environmental risk of GMOs	Discussion of readings	Signal to Noise GMO edition: genetic diversity; Ellestrand 2003; Ellestrand 2006; Ryffell 2014	Reading guide + sum. of related paper
Mar 12	--	NO CLASS	--	--
Mar 19		Health Risks of GMOs	Seralini 2012, Van Eenennaam 2014, Nicolia 2014, Hilbeck 2015	Reading guide + sum. of related paper, Google tour
Mar 26	GMO crop outcomes: Do they increase yields, reduce pesticide use, and reduce costs?	Discussion of readings	Lu 2012; Tabashnik 2013; Klumper 2014; Gilbert 2014; NYT article	Reading guide + sum. of related paper
Apr 2		Agribusiness, Monsanto, and NGOs Discussion of readings	Gutierrez 2015; Democracy Now and Genetic Literacy Project	Reading guide + sum. of related paper

			articles; History of Agribusiness	
Apr 9		Sustainable agriculture – do GM crops have a role? Discussion of readings	Reganold 2016; IFOAM GMO Position Paper; Marchman 2105	Reading guide + sum. of related paper
Apr 16		Should GM crops be used in agriculture? (In class debate)		Debate Research
Apr 23		Short presentaitons on policy briefs		Policy Brief
May 7 11a-1p		Final period: listen to podcasts		Podcasts

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