

**ENST 483: Coastal Zone Sustainability
Maymester Program 2022**

Locations: Wrigley Marine Science Center, Santa Catalina Island

Sections: 33051 (DG) and 33052 (JS); 4 units

Course Dates: May 15 to June 10, 2022

Course Instructors:

Dr. David Ginsburg, Professor (Teaching), ENST
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Dr. Jill Sohm, Associate Professor (Teaching), ENST
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Course Description

Field skills and ecosystem management tools to investigate environmental problems in coastal zones; cultural and scientific topics; and the collection and analysis of environmental data. *Recommended preparation: ENST 100*

Ground rules for field and classroom activities:

- Share responsibility for including all voices in a conversation
- Listen respectfully to your classmate's and your instructor's viewpoints
- 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 group work during class and outside of lecture seriously
- Understand that your classmates may have different experiences from your own
- Understand that there are different approaches to solving problems

Course learning objectives

Student learning objectives for this course are aligned with those of the ENST Program (see [link](#)):

Students will:

- Demonstrate an understanding of the concept of sustainability through policy, science and human behavior
- Articulate issues facing the environment from a scientific and social perspective, and seek a diversity of perspectives from a multidisciplinary point of view
- Examine how environmental issues affect humans from multiple perspectives,

Return to in-person instruction

All members of the USC Wrigley Marine Science Center (WMSC) community (faculty, students, staff) must comply with Trojan Check, which includes fulfilling the university's vaccination policy, as well as completion of the university's recently relaunched Hygiene Health and Safety Training in order to access campus. As such, masks must be worn at all times (as per USC policy) inside (e.g., classrooms, offices, etc.). **Students are expected to comply with all aspects of USC's COVID-19 policy.** Failure to do so may result in removal from the class and referral to Student Judicial Affairs and Community Standards.

Course Overview

Environmental problems like ecosystem management, conservation biology and climate change do not belong to a single country. Maymester courses are designed to provide learning opportunities about topics like these that must be managed through regional and, sometimes, global cooperation.

The purpose of this course is to introduce students to field skills and ecosystem management tools used to investigate complex environmental problems in coastal areas. Students will study at WMSC, off Santa Catalina Island, which is an ideal environment for students to gain hands-on research experience investigating ecosystem management strategies for protecting and preserving coastal ecosystems.

Specific course goals include investigating important environmental issues such as ecologically sustainable development, fisheries management, protected-area planning and assessment, and natural resource governance issues. We will review these topics in terms of their application to local issues within the Los Angeles region and to more remote (and biologically diverse) areas such as other island ecosystems in the California Channel Islands. Students will address a suite of social, cultural, and scientific topics (e.g., environmental effects of natural disasters, anthropological history, ecosystem co-management), as well as participate in active data collection and analysis of biological, physical, and chemical conditions of marine environments.

Students will be provided with direct opportunities to work and learn in diverse coastal environments, and to gain a better understanding of the interdisciplinary complexities of implementing ecosystem management strategies in a real landscape. At the end of the course, students will present a summary of their directed learning projects to gain feedback on their results and outcomes.

Course Rationale

The California Channel Islands are located in the Southern California Bight (SCB), which stretches along ~700 km of curved coastline from Point Conception in Santa Barbara County to Punta Banda, south of Ensenada, Mexico. The change in angle of this region of coastline creates a large backwater eddy in which subtropical waters flow nearshore along a northward trajectory and subarctic waters move offshore in a southerly direction. As these different water masses converge, this unique oceanographic circulation pattern acts as a biological transition zone making the SCB one of the most productive and economically valuable nearshore regions in the United States. This area, known as a hotspot of marine biodiversity, is home to nearly 500 species of macroalgae and fishes, and more than 5,000 species of invertebrates.

Santa Catalina, the largest of the Southern Channel Islands, is the only island in the archipelago with a permanent civilian population of ~4,000 people. The island's nearshore environment is easily accessible from the Southern California mainland, located ~35 km south-southwest of Los Angeles, and is an important resource to a range of stakeholders including fishers, recreational groups, local residents and scientists. However, with nearly one million visitors a year, Catalina's marine biodiversity and ecosystems are under increasing pressure from multiple anthropogenic stressors such as nutrient pollution, habitat modification and climate change. Accordingly, this course will evaluate these important issues in the light of future needs by performing first-hand comparisons of the impacts of human activities, as well as the different management and conservation strategies practiced in both island settings.

Course Prerequisites

Students in all disciplines are eligible, however ENVS, ENSH and Natural Science majors/minors may be prioritized for enrollment. Students who hold an American Academy of Underwater Sciences (AAUS) Scientific Diver certification are eligible to incorporate an underwater research component to their course experience. This is usually accomplished through ENST 298: Introduction to Scientific Diving, which is offered during the Spring semester. The USC DSO (and/or her designee) must confer Scientific Diver in Training status prior to USC scientific diving activities.

Furthermore, all students, including non-diving students will be assessed for water safety and ability to perform in water ecosystem measurements. Special consideration with regard to real-time weather and

ocean conditions will be made for all in-water components of this course. The course instructors and staff will make schedule adjustments to ensure conditions are safe and appropriate for field activities. If, on a given day, the requirements for in-water activities cannot be met, students will be assigned an alternative activity related to this course.

All diving and snorkeling policies and procedures are based on the diving standards set forth by the USC Diving Control Board and the American Academy of Underwater Sciences (AAUS). Additionally, scientific diving projects and activities under the auspices of USC must be qualified and authorized according to the USC Dive Control Board, AAUS Standards, and the USC Diving Safety Manual.

Course Reading and Supplementary Materials

All assigned readings (including book chapters, case studies, and scholarly articles) will be announced at the beginning of the course, and, when possible, made available on Blackboard and via email messages sent to the class. Lecture materials will be made available after a given lecture and/or activity is completed. Sometimes computers will be used in class to work with real-time data and/or to run simple simulations. Students will be notified when computers are needed. This course involves in depth reading and critical analysis of science policy literature, as it is a four unit, upper-division course.

Course Format

At the start of the course, the instructors will:

- Introduce students to the concept of ecosystem sustainability
- Train students in the scientific methodology necessary to evaluate aquatic and environmental habitats.
- Familiarize students with the Catalina environment, that are representative of different biological, social or historical components of the island's history
- Develop ideas for original short-term learning projects within the context of sustainability to explore a natural/social challenge during the in-field portion of the course. Students will conduct literature reviews and develop project designs during the on-campus portion of the course
- Interact with instructors, researchers and community members in the course of learning about the biology, history and culture of Catalina Island
- Conduct independent research projects on aspects of sustainability in island systems. These projects will culminate in final presentations delivered to class and USC scientists at end of in-field experience
- Integrate the knowledge, interests and perspectives of USC students from different disciplines to enhance the learning experiences of all students

The course instructors, USC faculty or a guest speaker will present daily lectures. Morning meetings will often be used to discuss the day's lecture and/or field activities. Throughout the course, students will work together to complete specific goals, which we will discuss in detail during the morning session. Each evening, we will meet to discuss journal articles, analyze data collected in the laboratory and/or field or discuss the day's experiences. Students are expected to attend and participate in all course activities.

Course Grading

Each student will be evaluated based on their performance on a species ID quiz (administered individually) and short group presentation (2 students) on the natural history of a given species (15%), participation in group discussions related to the assigned articles from the primary literature as well as leading one discussion on a given article (25%), participating in group data collection and related field work on Catalina and Andros Islands (25%), developing a video blog or field survey to be conducted/distributed to assigned stakeholders on Andros (completed in pairs; topic will be pre-assigned; 25%), and a two-page course

summary/experiential reflection (submitted on individual basis; 10%). Final scores on species IDs, readings/discussions, and course summary/reflection essay are based on an individual student's performance on these assignments (i.e., students must work independently). Group assignments, however, are a required component of this course and include the collection and reporting of field data or a video blog.

Daily attendance and participation by students is required. **Note:** *Students are responsible for coordinating their arrival and departure plans to and from Catalina as outlined on the course schedule (below).* Students that do not arrive on time (e.g., miss class and/or arrive/depart more than one-day before and/or after the dates and times on the syllabus) will be marked absent, which will result in a deduction of points from their final grade. This breakdown of the final grade structure is consistent with the [Student Learning Objectives for the USC Dornsife Environmental Studies Program](#).

Grading Breakdown

ASSIGNMENT	PERCENTAGE
Species ID Quiz & Group Presentation	15%
Article Readings, Discussions, and Article Presentation	25%
Data Collection and Field Work	25%
Group Field Report or Video Blog	25%
Two-Page Summary/Reflection	10%
TOTAL	100%

Grading Scale

Final scores will be determined using the scale below. However, this scale may be adjusted depending on the progress of the class.

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

Additional Course Information and Policies

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 schedule, 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 or field.

Students are expected to be respectful of their peers and instructors, as well as USC WMSC and Forfar Field Station faculty and staff. Additionally, students are expected to be prepared in advance for class and field activities. The use of mobile phones, email, and social media is not permitted during class or in the field (unless directed otherwise by the instructors).

Travel Information and Housing

Maymester is included as part of your spring 2022 semester tuition, however this experience does have

some out-of-pocket costs associated with room and board on Catalina Island (see [link](#) for details). All USC students are required to have sufficient health and accident insurance protection during their study abroad program. To ensure proper coverage, all students going abroad must enroll in either USC Overseas Policy or the USC Student Health Insurance Plan for the term they are abroad (see the USC [Student Affairs website](#) for more information. Additionally, the USC Dive Program requires each diving student to enroll in the Diver's Alert Network, [Diving Accident Insurance Plan](#).

Finally, all students must sign and/or complete specific documents (e.g., Travel Release Form, Medical Treatment Authorization Form, Roster Spreadsheet) that are required by the USC Student Affairs Office at least 7 days before departing overseas. The course instructors will distribute, review and complete these documents with each student during an orientation session before the start of the Summer session.

Statement on Academic Conduct and Support Systems

Computer Support: *Zoom or general IT USC Support:* Phone: 24/7 on call: 213-740-5555; Email: consult@usc.edu. *Blackboard Support:* Phone: 213-740-5555 (option 2, 24/7 on call); Email: blackboard@usc.edu

Academic Conduct: Plagiarism is an academic offense with serious consequences. Familiarize yourself with its definition in [SCampus](#). Other forms of academic dishonesty are equally unacceptable. See additional information in [SCampus and university policies](#) on scientific misconduct.

Counseling and Mental Health: (213) 740-9355; 24/7 on call. Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops and crisis intervention. See [link](#) for details.

National Suicide Prevention Lifeline: (800) 273-8255; 24/7 on call. Free and confidential emotional support to people in suicidal crisis or emotional distress. See [link](#) for details.

Relationship and Sexual Violence Prevention Services: (213) 740-9355; 24/7 on call. Free and confidential therapy services, workshops, and training for situations related to gender-based harm. See [link](#) for details.

Office of Equity and Diversity: (213) 740-5086; Title IX: (213) 821-8298. Information on how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors and applicants. See [link](#) for details.

Reporting Incidents of Bias or Harassment: (213) 740-5086 or (213) 821-8298. Report incidents of bias, hate crimes and microaggressions to the Office of Equity and Diversity, Title IX for appropriate investigation, supportive measures and response. See [link](#) for details.

Office of Student Accessibility Services: (213) 740-0776. Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology and support for individual needs. See [link](#) for details.

USC Campus Support and Intervention: (213) 821-4710. Assists students and families in resolving complex personal, financial and academic issues adversely affecting their success as a student. See [link](#) for details.

Diversity at USC: (213) 740-2101. The Provost's Diversity and Inclusion Council provides information on events, programs and training resources students at each academic school. See [link](#) for details.

USC Emergency: UPC: (213) 740-4321; HSC: (323) 442-1000; 24/7 on call. Emergency assistance and means to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. See [DPS link](#) and [Emergency link](#) for details.

USC Department of Public Safety: UPC: (213) 740-6000; HSC: (323) 442-120; 24/7 on call. Non-emergency assistance or information. See [link](#) for details.