

**UNIVERSITY OF SOUTHERN CALIFORNIA  
Environmental Studies Program**

**ENST 310: Sustainable Fisheries Management (4 units)**

Dr. David Ginsburg, Assoc. Prof. (Teaching)	Spring 2019
CAS 116, dginsbur@usc.edu	Section 33017
Office phone: (213) 740-8576	TTH 11:00-12:20 pm
Office hours: TBA	WPH 203

**Course Overview**

This course integrates scientific, social, political, and economic factors of fisheries management, engaging students in key issues of coastal and marine sustainability. Fisheries are an important source of food and livelihood for societies across the planet. Yet many fisheries are in decline or collapse due to overfishing and/or habitat degradation. This course will present the historical and modern significance of fishing to society, the causes and implications of fisheries decline, and current and proposed strategies for achieving more sustainable fisheries. Students will be exposed to the fundamental ecological, social, political, and economic dimensions of fisheries management from local to international scales, with case studies focusing on Southern California fisheries and marine protected areas. This course is designed for hands-on learning and includes quantitative components that allow students to evaluate ecological data and perform analyses related to stock assessment, game theory, and stakeholder analysis. Such learning objectives are aligned with those of the ENST Program, as a whole (for details, see: <https://dornsife.usc.edu/environmental-studies/learning-objectives/>). Ultimately, students will learn about some of our most important global resources, and why achieving sustainable fisheries will be essential to the future well being of humans and the environment.

**Course Texts**

1. All the Fish in the Sea: Maximum Sustainable Yield and the Failure of Fisheries Management by Carmel Finley. University of Chicago Press; 2011. Abbreviated AFS below: *Available online by USC Library*.
2. *An Unnatural History of the Sea* by Callum Roberts. Abbreviated UHS below; *Note: available online by USC Library*

**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, data assignments, reading guides, presentations, and class participation. Course materials will be posted on Blackboard for download, subsequent study, and analysis. Note: Data Assignments and Reading Guides will be submitted via Blackboard (see Bb for specific deadlines and grading rubrics). Exam questions will be drawn from course readings and material discussed in lecture 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 midterms or final exams will be allowed without explicit permission.*** If for any reason a student misses an exam or other course requirement, they will be given a zero for that assignment. Course final grades (based on percent total points) will be determined using the following scale: >95 = A; 90-94 = A-; 87-89 = B+; 83-86 = B; 80-82 = B-; 77-79 = C+; 73-76 = C; 70-72 = C-; 67-69 = D+; 63-66 = D; 60-62 = D-; <59 = F.

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

<b>Midterm 1</b>	100 pts	16%
<b>Midterm 2</b>	100 pts	16%
<b>Final Exam</b>	125 pts	20%
<b>Group Data Project &amp; Presentation</b>	100 pts	16%
<b>Data Assignments (6 total)</b>	126 pts	20%
<b>Reading Guides &amp; Discussions (9 total)</b>	81 pts	12%
<b>TOTAL COURSE POINTS</b>	<b>632 pts</b>	<b>100%</b>

### Data Assignments & Group Project

Students will learn to use R-Studio, an open source, statistical programming and graphics program, and become proficient in the use of Microsoft Excel, a spreadsheet application used for data management. Using these software packages, students will analyze a series of datasets (provided by the instructor) and look for trends that support their hypotheses. Each data assignment will require an individual student to organize and quantitatively evaluate a relatively simple dataset (e.g., single parameter such as fish size), as well as provide a 2-3 page written report (single-spaced) on the results. The final data assignment (n=1) is a group project (2 students per group) and will require students to analyze a more complicated set of data (e.g., multiple parameters such as fish size and biomass). Group projects will include a written (4-5 page, single-spaced) and oral presentation where students will showcase their research question and findings based on their analysis of the relevant data. Each data assignment (including the final project) will be evaluated for originality, accuracy and thoroughness of research, attention to detail, and quality of finished project.

### Course Schedule\*

For the best learning experience, you are expected to have read the 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.

\*Note: This is a draft schedule and does not include readings from AFS.

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Readings</b>
1	Jan 8, 10	Fisheries Ecology: Methods & Management; <b>Data Assignments &amp; Group Project Review</b>	UHS: Ch. 1-3
2	Jan 15, 17	<b>Jan 15 MLK Holiday – No Class;</b> Overfishing & Shifting Baselines; <b>Data Assignment 1 (Weds)</b>	UHS: Ch. 11, 12, <b>Pauly &amp; Watson 2003</b>
3	Jan 22, 24	Shifting Baselines Cont'd & Cod Case Study; <b>Reading Guide 1 (Weds)</b>	UHS: 15, 18, <b>Frank et al. 2005</b>
4	Jan 29, 31	Primary Production & Fisheries; <b>Data Assignment 2 (Weds)</b>	<b>Jackson et al. 2001</b>
5	Feb 5, 7	Case Studies CA-OR-WA Fisheries; <b>Reading Guide 2 (Mon);</b> <b>Reading Guide 3 (Weds)</b>	<b>Chavez et al. 2003</b>
6	Feb 12, 14	<b>MIDTERM 1 (Mon);</b> Population Dynamics & Stock Assessments; <b>Reading Guide 4 (Weds)</b>	<b>Pauly 1998</b>
7	Feb 19, 21	<b>Feb 19 Presidents' Holiday – No Class;</b> Fisheries Management: Impacts; <b>Data Assignment 3 (Weds)</b>	<b>Fogarty &amp; Murawski 1998</b>

8	Feb 26, 28	Fisheries Management: Impacts Cont'd; Marine Governance & Policy; <b>Reading Guide 5 (Mon);</b> <b>Data Assignment 4 (Weds)</b>	UHS: CH. 22-24, <b>Alexander 1993</b>
9	Mar 5, 7	Marine Governance & Policy Cont'd; <b>Reading Guide 6 (Mon)</b>	<b>Claisse et al. 2014</b>
10	<b>Mar 12-14</b>	<b>SPRING BREAK NO CLASS</b>	
11	Mar 19, 21	Aquaculture & Sustainable Fisheries; <b>Reading Guide 7 (Weds)</b>	MFE: Ch. 16, <b>Bush et al. 2014</b>
12	Mar 26, 28	<b>MIDTERM 2 (Mon)</b> Fisheries Management (Solutions); <b>Data Assignment 5 (Weds)</b>	<b>Roberts &amp; Polunin 1993</b>
13	Apr 2, 4	Marine Reserves and Ecosystem-Based Management I; <b>Reading Guide 8 (Weds)</b>	<b>Ruckelshaus et al. 2008</b>
14	Apr 9, 11	Marine Reserves and Ecosystem-Based Management II; <b>Data Assignment 6 (Mon);</b> <b>Guest Lecture (Weds) (K. Heidelberg)</b>	<b>Pikitch et al. 2003</b>
15	Apr 16, 18	Resilience & Sust. Seafood for Future; <b>Reading Guide 9 (Weds)</b>	UHS: Ch. 25, 26 <b>Micheli et al. 2014</b> <b>Hughes et al. 2005</b>
16	Apr 23, 25	Group Project Reports and Presentations	
	<b>May 4</b>	<b>FINAL EXAM, Tuesday 11:00 am-1:00 pm, WPH 203</b>	

### 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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://dps.usc.edu)