



Coastal Systems

ENV 6932 – Spring 2017

Catalog Description: 3 credits. The ecology of coastal ecosystems and their response to global change.

Instructor: Dr. Christine Angelini
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Contact: **Class website (UF Canvas):** <https://lss.at.ufl.edu>
Course e-mail: Use Canvas for ALL correspondence
Office Hours: Wednesday 4-5pm, Weil 575H

Time & Location:

- M 7th - 8th period (1:55-3:50)
- W 8th period (3:00-3:50)
- Phelps Lab Conference Room

Course Objectives:

This course will introduce students to the physical and biological factors that regulate the structure and functioning of estuarine and coastal ecosystems, including salt marshes, mangroves, oyster reefs, coral reefs, sponge reefs, seagrass meadows, and intertidal mudflats. In addition, students will learn why global change is driving changes in the healthy and distribution of these valuable ecosystems as well as what strategies are being utilized to limit their degradation. The course will be comprised of lectures, discussions of the primary literature, group exercises, and field trips. Over the semester, students will learn how to discuss ecological concepts and theory, articulate testable research questions and hypotheses, build and

manage a reference library, and create presentations for a broad audience. The course will culminate in a group project presentation and paper.

Course Supplies:

- **Required Textbook:** None, although Marine Community Ecology and Conservation by Mark Bertness, John Bruno, Brian Silliman and Jay Stachowicz is recommended.
- **Assignments, readings, and announcements** will be posted on the course website, so it is important to *regularly check the class homepage* (<https://lss.at.ufl.edu>).

Course Expectations:

- **Attend class and arrive on time.**
- Complete assigned readings *prior to the class for which they are assigned.*
- **Participate in class discussions,** including your thoughts on the assigned readings and lecture subjects. Learning is more than the passive accumulation of information, it requires active engagement! **Be curious & responsible for your own education.**

Grading Scale:

A (≥93), A- (≥90 & <93), B+ (≥87 & <90), B (≥83 & <87), B- (≥80 & <83), C+ (≥77 & <80), C (≥73 & <77), C- (≥70 & <73), D+ (≥67 & <70), D (≥63 & <67), D- (≥60 & <63), E (<60).

Grading Scheme and Assignments:

Class Participation	15%
Homework	50%
Research Manuscript	25%
Group Project	10%
Total	100%

- **Participation:** You cannot receive an A in this course without actively participating. Earn your participation grade by consistently attending class, asking and answering questions, and offering your opinion on course topics and current events.
- **Homework:** There will be homework assignments designed to help students develop their own research questions, improve their writing skills, or reinforce their understanding of the material covered in the lectures and readings.
- **Research Manuscript:** Over the semester, each student will write a manuscript, formatted for peer-reviewed publication, on a research topic of their choice. For thesis masters students or PhD students, this manuscript should be on their own research results. For non-thesis masters students, we will work together to analyze data that can be freely acquired through online ecological databases.
- **Independent Group Project:** The independent project is a half semester-long group ($n=3$) project. Each group will investigate a coastal environmental problem of their choice, research a technology or management strategy being developed to solve it, and develop either on online, audio-recorded, or printed product to inform the public of this problem and what they can do to help address it. Students will be asked to identify a target audience and tailor their product to reach and inform that audience.

Field Trips:

Three field trips will be organized to visit coastal ecosystems. The first will be a day-long field trip to visit salt marsh habitats at the GTM NERR, the second a 4-day day trip to visit mangrove, seagrass, and coral reef habitats in South Florida, and the third a half-day trip to visit oyster reefs in Cedar Key. Field trips may be scheduled on Mondays and weekends. Additional details will follow.

Academic Honesty:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*"

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, presentation). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. **It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code.** Violations of the Honor Code at the University of Florida will not be tolerated. **Violations will be reported to the Dean of Students Office for consideration of disciplinary action.** For more information regarding the Student Honor Code, please see: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx>.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources:

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance:

- *University Counseling & Wellness Center*, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation

- Self-Help Library
- Training Programs
- Community Provider Database
- *Career Resource Center*, First Floor, J. Wayne Reitz Union, 392-1601, www.crc.ufl.edu

Students with Disabilities Act:

The Dean of Students Office coordinates the needed accommodations of students with disabilities. This includes the registration of disabilities, academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services, and mediating faulty-student disability related issues. *Dean of Students Office*, 202 Peabody Hall, 392-7066, www.dso.ufl.edu.

Course Evaluations:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open.

Course Topics and Schedule: This schedule is tentative and subject to change based on the timing of fieldtrips, guest lecturer schedules, student interests, and current events.

We ek	Dat e	Topic	Reading Assignment	Manuscript Assignment
1	1/4/ 17	No Class	NA	
2	1/9/ 17	Intro & Coastal Ecosystem Organization	History of Marine Ecology Chapter	
2	1/11 /17	Large-scale physical drivers: geology	Fagherazzi et al. 2012 Review	
3	1/16 /17	MLK Day	No reading	
3	1/18 /17	Large-scale biotic drivers: food & larvae	Cowen et al. 2007	MS Outline Due
4	1/23 /17	Large-scale physical drivers: oceanography	Valle-Levinson Chapter	CA comments on outline
4	1/25 /17	Competition: space & nutrients	Buss & Jackson 1979	
5	1/30 /17	TRIP TO GTM NERR	Garland & Kimbro 2015	Methods: Draft 1
5	2/1/ 17	Competition for resources: food	Levine et al. 1998	
6	2/6/ 17	Top-down control: predation	Griffin et al. 201X, Duffy 2003	
6	2/8/ 17	Top-down control: disease	Lafferty & Harvell Chapter	Figures: Draft 1
7	2/13 /17	Workshop Manuscripts: no formal class	No Reading	
7	2/15 /17	Facilitation: stress amelioration	Altieri et al. 2007; vanderHeide et al. 2012	
8	2/20	Habitat connectivity	Schill et al. 2015; Mumby et al. 2006	Analysis &

	/15			Results: Draft 1
8	2/22 /15	Human Impacts: Eutrophication	Gedan & Altieri 2015; Silliman et al. 2005	Group Project Selection
9	2/27 /17	Human Impacts: Exploitation of Foundation Species	Orth et al. 2006; Beck et al. 2011	
10	3/1/ 17	Human Impacts: Overfishing	Worm paper	Methods - Results: Draft 2
10	3/3- 3/7	TRIP TO SOUTH FLORIDA ECOSYSTEMS	Ellison & Farnworth 1987, Burkepile & Hay 2008, NPS 2015	
11	3/13 /17	Climate Impacts: Warming & Acidification	TBA	
11	3/15 /17	Climate Impacts: Sea Level Rise	Craft et al. 2008	Introduction: Draft 1
12	3/20 /17	TRIP TO CEDAR KEY	Seavey et al. 2011	Group Project Outline due
12	3/22 /17	Climate Impacts: Drought	Silliman et al. 2005	
13	3/27 /17	Resilience to climate impacts	de Fouw et al 2016; Angelini et al. 2016	Discussion: Draft 1
13	3/29 /17	Resilience to human impacts	Coverdale et al. 2014	
14	4/3/ 17	Ecosystem Services: Carbon Sequestration	Loh & Pawlik 2014 + TBA	
14	4/5/ 17	Ecosystem Services: Nursery functioning	Hughes et al. 2016 PNAS	Intro-Discussion: Draft 2
15	4/10 /17	Eco.Serv.: Shoreline Protection & Group Presentation	Gedan et al. 2011	Group Projects Due
15	4/12 /17	No Class	No reading	
16	4/17 /17	Restoration & Degraded Ecosystem Function	Bersoza et al.; Nelson et al. 2016	
16	4/19 /17	Manuscript Presentations	No reading	Manuscript Presentation
17	4/22 /17	Final Manuscript Due	No reading	Final Manuscript

*Assigned readings are posted in the “Resources” section of the Canvas site. **Complete assigned readings prior to the class for which they are assigned, so we can discuss them in class.**