MARINE BIOLOGY

Fall | August 22 – Dec 5 | 2018

1. Course Information

Course Number: ZOO 4403C
Credit hours: 4
Lecture: 211 Bar, W, periods 8&9 (3:00 – 4:55 pm)
Lab: 120 Car, F, periods 6-9 (12:50 – 4:55 pm)
Field trips: see schedule below

Instructors: Lianne Allen-Jacobson & Anya Brown
TA: Phil Shirk
Office: 616 Bartram
Hours: W 2-3pm and by appointment

Pre-requisites: BSC 2011 and 2011L, or equivalent, with minimum grades of C. You must be able to swim and be very comfortable in the water.

Course fees: $174.44. These fees are automatically charged to your UF account, and cover the costs for gas, disposable lab items, and maintenance of University vehicles used for the field trips.

Lab fees: $~150.00. These fees are also automatically charged to your UF account. These fees cover lodging, lab fees, and food for the trip to the Whitney Lab, travel costs, boat fees, and other course supplies. Food is not included for the day trips.

Course website and email communication: If you do not have access to Canvas by the first day of class, please notify one of us immediately. We will post all course documents and announcements on Canvas, and we will use Canvas for all e-mail communication related to the course. If you have a course-related concern, please send us an e-mail through Canvas. You are responsible for all announcements made in class and/or posted on the course website.

2. Required materials

Textbook: *Marine Biology - function, biodiversity, ecology* (4th edition) by Jeffrey S. Levinton, available at bookstore or can rent via amazon (ISBN 978-0199857128)

Lab materials: If a student has access to a laptop, they should bring it to all classes noted on the schedule. If a student does not have access, please notify the instructor as soon as possible.

Field materials: On the day trips, most of the time in the field will be spent snorkeling. Students will need access to a snorkel, mask, and fins. Students will need to arrange all other "personal" gear (e.g., clothing, bug spray, sunblock, headlamp, sleeping bag, pillow, backpack, towel, etc.)

3. Content

Description: Marine biology is the study of functional biology, ecology, and biodiversity of life in the sea.

Objectives: You will learn how physical conditions govern life in the sea, how ecological processes influence species distributions, and how humans have disturbed marine ecosystems. You will develop a Research Proposal that will reinforce the lecture material. You will be trained to collect and analyze ecological data, as well as identify a wide range of marine organisms and gain familiarity with many of Florida's marine habitats.

Learning outcomes:

1) Recognize the diversity, physiological mechanisms, and ecological processes of marine organisms and systems
    - Formative assessment: Questions during lecture and field trips, prep questions
    - Summative assessment: Exam
2) Synthesize knowledge of physical and chemical processes of the ocean and the biology of organisms, to ask questions about natural history and ecology
    - Formative assessment: Questions during lecture, discussions of hypotheses and project ideas
    - Summative assessment: Lab reports, research proposal, and exam

3) Form hypotheses after observing marine habitats, and justify the type of experiment that would be used to test those hypotheses
    - Formative assessment: 5 hypotheses exercises, project plan, discussions
    - Summative assessment: Research proposal
4) Effectively communicate in written and oral form, demonstrating the ability to effectively search the literature and the ability to use effective presentation skills
    - Formative assessment: Peer review
    - Summative assessment: Presentation, research proposal
5) Manage and analyze data collected in the field and from online databases
    - Formative assessment: Discussion during data analysis and data submissions
    - Summative assessment: Lab reports

*Modified from the Learning Outcomes set for Marine Biology majors at Scripps Institute for Oceanography

4. Expectations

Responsibilities: To ensure that all students have the potential to succeed, it is our responsibility to be timely, organized, transparent, and communicative. As a student, it is your responsibility to complete all assignments on time, actively participate, and to voice questions and concerns- while remaining receptive to the answers.

Time commitment: The University policy is that each credit hour is associated with 45-hour commitment (= 180 hours total), including time spent studying and reading. An approximate breakdown of this time is 30% field/lab, 20% lecture, and 50% studying.

Attendance: Attendance is required for all class meetings, including lectures, labs, and field trips. You are responsible for all course materials. There are many field trips, and this material cannot be completed at an alternate time. It is very important that you arrive on time for all activities. If you are late for a field trip, we might not be able to wait for you.

If you are aware of a planned conflict, it is your responsibility to make me aware of any planned conflicts BEFORE the absence - this does not guarantee that you will be able to complete the material at an alternate time. If there is an unforeseen conflict, it is in your best interest to speak to us as soon as possible. If the conflict DOES NOT satisfy *acceptable reasons* for an *excused* absence, you will receive a zero for all missed activities. Please find the UF policy for *excused* absences here: (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx). To justify an *excused* absence, it is your responsibility to provide all relevant documentation.

Conduct in class: This is a small class, and there will be many assignments that require you to work with your peers. Please be respectful to your peers, instructors, and TA.

Regarding electronic devices, you are welcome to take notes on a laptop. Please do not use your devices that can be disruptive during class; this could include: phones, video recorders, digital cameras and MP3 players. If you repeatedly disrupt class, you will be asked to leave, and will not have the opportunity to complete missed work.

Academic honesty and honor code: All students must review and abide by the University Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/).

Accommodations for students with disabilities: We would like to accommodate all students with disabilities. To do so, the student must first request an Accommodation Letter from the UF Disability Resource Center (https://www.dso.ufl.edu/drc). Once we receive the Accommodation Letter, we will be able to discuss arrangements with you, the student.

UF counseling, self-help, and career services: Life can be very difficult, and these situations are often complicated by coursework. If you are experiencing a personal problem or struggling with your coursework, please make use of the available resources: counseling (www.counseling.ufl.edu/cwc/, 352-392-1575), emergency counseling (www.counseling.ufl.edu/cwc/Emergency-Services, or call 911), self-help (: www.counseling.ufl.edu/cwc/SelfHelp-Resources.aspx), career guidance (www.crc.ufl.edu/, Reitz Union, 352-392-1601).

Software use: All faculty, staff, and student 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

5. Grading

Approximate breakdown of points:

Exam	150	(30% of semester grade)
Lab and field activities	150	(30% of semester grade)
Research proposal	150	(30% of semester grade)
Participation	50	(10% of semester grade)
Total	500	

Your final score will not be rounded (for example, an 89.9% will not be rounded up to a 90%).
The grade scale is (all numbers are percentages):

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
≥94	≥90	≥87	≥84	≥80	≥77	≥74	≥70	≥67	≥64	≥61	<61

If Marine Biology is one of your critical-tracking courses, keep in mind that a "C-" does not qualify. For more information, please see:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Late assignments: All assignments must be completed on time. Every day that an assignment is turned in late, you lose 10% of the total points possible for that assignment. If you have a planned conflict, you must make arrangements BEFORE the absence,

RE-Grading: If you believe that one of your assignments or exams was incorrectly graded, you may submit a written request for a re-grade. If we re-grade your assignment or exam, the entire document will be reviewed. You must submit an official request within a week of receiving the graded assignment or exam. Your request must include two items, 1) written statement explaining why you think the assignment or exam was incorrectly graded and 2) the original assignment or exam.

If you think there was a clerical or arithmetic mistake, you do not need to submit the assignment or exam for regrading. Bring this type of mistake to our attention at the end of class or by e-mail.

6. Schedule

			Activity	Ch	Assignments	Points
August	22 W	week 1	**Lecture:** Sounding the deep & the oceanic enviornment	1,2		
	24 F		**Lecture:** Ecological and evolutionary principles Part I	3		
	29 W	week 2	**Lecture:** Ecological and evolutionary principles Part II	3		
	31 F		*No Class*			
September	5 W	week 3	**Lecture:** Seagrass beds, algae, field methods	*		
	7 F		**Data analysis:** Intro to R and statistics	‡	R/stats questions	10
	12 W	week 4	**Lecture:** The chemical and physical environment Part I	4	Prep questions (Ozello)	5
	15 S		**Saturday, Sept 15: trip to Ozello**		5 hypotheses exercise (Ozello)	5
	19 W	week 5	**Lecture:** The chemical and physical environment Part II	4	Submit proofed data (Ozello)	5
	22 S		**Saturday, Sept 22: Trip to Whitney**		5 hypotheses exercise (Whitney)	5
	26 W	week 6	**Discuss:** Hypotheses	‡		
	28 F		**Marine Ecology:** data analysis and report	‡	Prep questions (SKML)	5
October	3 W	week 7	**Lecture:** Marsh and snails	**	Lab report	55
	6 S		**Saturday, Oct 6: Trip to Seahorse Key**		5 hypotheses exercise (SKML)	5
	10 W	week 8	**Lecture**: Reproduction, dispersal, and migration Part I	5	Prep questions (GTM NERR)	5
	13 S		**Saturday, Oct 13: Trip to GTM NERR**		5 hypotheses exercise (GTM NERR)	5
	17 W	week 9	**Lecture**: Reproduction, dispersal, and migration Part I	5		
	19 F		**Collect preliminary data:** lab, field, litterature		Prep questions (Lab)	5
	24 W	week 10	**Lab:** Set up snail experiment		Proposal plan	10
	26 F		**Discuss:** Project ideas	‡		
	31 W	week 11	**Exam**		Exam	150
November	2 F		*No Class- Homecoming*			
	7 W	week 12	**Lab:** Take down snail experiment		Submit proofed data (Lab)	5
	9 F		**Marine Physiology** data analysis and report	‡		
	14 W	week 13	**Discuss:** How to give a presentation			
	16 F		**Presentations**		Presentation and peer evaluation	60
	21 W	week 14	*No Class- Thanksgiving*			
	23 F		*No Class- Thanksgiving*			
	28 W	week 15	**Presentations**			
	30 F		**TBD**		Lab report	55
	5 W		**Discuss:** projects, future research, careers, graduate school		Research proposal	60

‡ Activities require a laptop, let us know if you do not have one available to bring to class
* Parts of chapters 11 and 15: pages 246-253 ,361-366
** Parts of chapters 12 and 14: pages 269-272, 335-343