

12:107 Marine Ecosystems and Conservation, 3 s.h.
University of Iowa
Fall 2012

SYLLABUS AND COURSE INFORMATION

Instructor:

Professor Ann F. Budd, 255 TH, 335-1817, ann-budd@uiowa.edu; Office hours: 10:30-11:30 am MTTh and by appointment

Teaching Assistant:

Andy Grass, 23A/259 TH, 335-1818, andy-grass@uiowa.edu; Office hours: 10:30 am-12 pm WF

Department of Geoscience

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Course description and topics covered: Introduction to ocean ecosystems, including coral reefs, mangroves, estuaries & salt marshes, sandy & rocky shores, seagrass & kelp beds, the open ocean & marine fisheries, and the deep sea. The course examines the biodiversity of each ecosystem, the interrelationship between the biota and the physical & chemical environment, and interactions among organisms, including food webs & symbiosis. It covers local & global threats to each ecosystem, including overfishing, pollution, ocean acidification, global warming, and sea level change. Special emphasis is given to the ongoing biodiversity crisis and solving conservation problems.

Course goals and objectives: The goal of the course is to provide students with an appreciation for the rich diversity of life in the sea, and the complex interactions among marine organisms and their physical & chemical environment. Students will develop an informed understanding of the ongoing threats to marine ecosystems, and the challenges involved in protecting, recovering, and sustainably using the living sea. Students are introduced to basic concepts in marine ecology and in the emerging field of marine conservation biology. You will learn how to gather and synthesize information on current environmental issues, and paraphrase journal articles in the scientific literature.

Course Format: Class meetings are held in a newly redesigned TILE classroom (135-TH). TILE stands for Transform, Interact, Learn & Engage, and the room design facilitates peer interaction within groups so that students may actively participate in learning. Each class is organized to promote student-centered learning through involvement in various activities. Each student is expected to arrive on time, to be prepared (i.e., by having completed reading assignments), to contribute equitably to group dialog, and to sometimes fulfill the role of spokesperson for your group. Tables (of up to nine students) represent the major organizational feature of the class, and are subdivided into smaller groups of two to three students.

Students in the class have a diversity of backgrounds, and if something is unclear, then ask. It really is up to you to master the material presented in the course, so be active in your education. Seek assistance

from the instructor and teaching assistant when needed. We will do our best to facilitate your learning the material and we hope you find the subject matter intellectually stimulating, entertaining and enjoyable.

Course website: For course syllabus and schedule, class materials and grades, see ICON

Attendance : Students are required to attend all class meetings unless there is a permitted reason for your absence. Class meetings are held in 134TH on Mondays, Wednesdays, and Fridays from 12:30-1:20PM. If you must miss a class, send Prof. Budd an email before the class explaining why you will be absent. If you miss a class, you are responsible for getting class notes and handouts from another classmate.

Late-to-class policy: Class will begin promptly at 12:30 pm, and it will be dismissed at 1:20 pm. You are expected to arrive at class before 12:30 pm and depart when it is dismissed. If you need to come late to class or leave early, please inform Prof. Budd before the scheduled class meeting.

Cell phones and computers: Cell phones MUST be turned off during class. Laptop computers should only be used for course-related activities (i.e., not for checking email, Facebook, etc)

Class materials: During each class, we will go over terms & concepts that are presented on powerpoint slides, and students are expected to take notes on what we cover. These slides will be posted in ICON at least 24 hours before each scheduled class meeting. Students are expected to print them and bring them to class.

Required textbook: (available at the IMU bookstore) Levinton, JS, 2008. Marine Biology: Function, Biodiversity, Ecology, third edition. Oxford University Press, New York, 640pp. ISBN:9780195326949

Reading assignments: In preparation for each class, students are expected to have completed readings indicated in the Class Schedule. Terms & concepts that you should know in association with each reading assignment will be posted at least 24 hours in advance in ICON. Some clicker questions given in class will involve these terms & concepts (see below). Students should expect to spend six hours per week on out-of-class preparation for the course.

Required clickers: (available at the IMU bookstore) Turning Technologies Student Response Systems are required in this course. Response Cards (“clickers”) are available for purchase from the IMU Bookstore. The same clicker can be used in many different classes. Two to six clicker questions will be given in class each week during weeks 2-15. Some questions will involve reading assignments for that day; others will serve as a review. You will be allowed to briefly refer to your notes when answering clicker questions. Grades for the best 10 weeks will be used to determine course clicker grades. No makeups will be allowed on clicker questions.

Discussions: Many Friday class meetings will be devoted to “discussion” of hot topics, as indicated in the Class Schedule. Specific instructions will be given during the class meeting before the scheduled discussion. In preparation for each discussion, students will be expected to research a specific topic using the internet or to paraphrase a journal article in the scientific literature, and then to submit a paragraph using the dropbox in ICON. As part of each discussion, the class will split up into breakout groups. Beginning with Discussion 3, one student will serve as moderator and one as recorder for each breakout group. The moderator and recorder will be responsible for presenting a 4-5 minute summary

of the discussion in their breakout group to the entire class. Breakout groups will remain the same for the entire semester, but the moderators and recorders will rotate each week so that all students have an opportunity to serve in these roles. Grades for discussion will be based on: (1) paragraphs submitted in ICON [10 points for each of 12 weeks (best 10 out of 12 weeks)], (2) breakout group presentations [28 points for moderator, 2 points for recorder], and (3) attendance [2 points for each of 10 weeks (best 10 out of 12 weeks)].

Term papers: One 8-page term paper (typed, double-spaced) is required. For the paper, students will conduct independent library research on a selected issue in marine conservation. The deadline is November 14 at 5 pm. Guidelines and a list of possible topics will be distributed on October 17. You will be required to submit your paper using the dropbox in ICON.

Exams: There will be one midterm exam and one final exam; the two exams are non-cumulative. The midterm will be given during the regular class meeting time on Wednesday October 10 in 125TH; the final will be given during Final Exam week at a place/time to be announced by the Office of the Registrar. Exams will consist of multiple choice, short answer, and essay questions; they will cover material presented in lectures and associated reading assignments. One 8.5 x 11-inch crib sheet will be allowed during exams.

Grading: This course may not be taken pass/fail. Grades are based on a curve. Grades for each item listed below and point totals will be posted in ICON.

Grades will be based on a total of 500 points:

- Midterm (October 10) = 100 points
- Final Exam (Final Exam Week) = 100 points
- Discussion = 150 points [100 for paragraphs + 30 for presentations (moderator + recorder) + 20 for attendance]
- Term paper (due November 14) = 100 points
- Clicker questions = 50 points (5 points for each of ten weeks)

Grade Distribution: In assigning final grades on a curve, we will follow the College of Liberal Arts and Sciences recommended grade distribution for an intermediate-level course:

A-18% B-36% C-39% D-5% F-2% Average-2.63

+ and - designations will be used, assigned evenly through the grade range (e.g., there will typically be an equal number of B-, B, and B+ grades).

Makeup Policy: Makeup tests are strongly discouraged. They must be arranged BEFORE the scheduled test or exam period, and an acceptable excuse must be provided. To arrange a makeup after a test or exam, the student MUST provide documentation that the absence was unavoidable.

Students with disabilities: Students with disabilities that require modifications of seating, testing, or other class requirements should report to Prof. Budd as soon as possible, so that appropriate arrangements can be made.

Tutorial services: No special tutorial services are available for this course.

Student's Rights and Responsibilities: All students in the College have specific rights and responsibilities (see: CLAS Student Academic Handbook). For example, you have the right to adjudication of any complaints you have about classroom activities or instructor actions. Information on these procedures is

available below and in the College's Student Academic Handbook. You also have the right to expect a classroom environment that enables you to learn, including modifications if you have a disability.

Your responsibilities to this class, and to your education as a whole, include attendance and participation. You are also expected to be honest and honorable in your fulfillment of assignments and in test-taking situations (see the University's Code of Student Life). You have a responsibility to the rest of the class, and to the instructor, to help create a classroom environment where all may learn. At the most basic level, this means that you will respect the other members of the class and the instructor, and treat them with the courtesy you hope to receive in turn.

Students who are physically or verbally disruptive in a class may be dealt with summarily by the instructor or referred to the dean of students. The instructor reports in writing to the dean of students any disciplinary action undertaken against a student. If you have questions, please talk to your instructor, your adviser, or CLAS Academic Programs & Services.

The College of Liberal Arts and Sciences Policies and Procedures

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS [Student Academic Handbook](#).

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (*Operations Manual*, III.15.2. Scroll down to k.11.)

Accommodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Honesty

All CLAS students have, in essence, agreed to the College's [Code of Academic Honesty](#): "I pledge to do my own academic work and to excel to the best of my abilities, upholding the [IOWA Challenge](#). I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled ([CLAS Academic Policies Handbook](#)).

CLAS Final Examination Policies

The final examination schedule for each class is announced around the fifth week of the semester by the Registrar. Final exams are offered only during the official final examination period. **No exams of any kind are allowed during the last week of classes.** All students should plan on being at the UI through the final examination period. Once the Registrar has announced the dates and times of each final exam, the complete schedule will be published on the Registrar's web site.

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit the instructor (and the course supervisor), and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS [Student Academic Handbook](#).

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI [Comprehensive Guide on Sexual Harassment](#) for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the [Department of Public Safety web site](#).

*These CLAS policy and procedural statements have been summarized from the web pages of the [College of Liberal Arts and Sciences](#) and The University of Iowa [Operations Manual](#).

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Class Schedule

Week	Date	Topic	Reading Assignment in Levinton (in preparation for class)
1	M Aug 20	1. Course introduction	
	W Aug 22	2. Principles of Oceanography	Chapter 1 (skim); Chapter 2, p.17-31
	F Aug 24	<u>Discussion 1</u> : Intro & biogeochemical cycles (a review)	
2	M Aug 27	3. Ecological principles 1	Chapter 3, p. 68-78
	W Aug 29	4. Ecological principles 2	Chapter 6, p.141-154
	F Aug 31	<u>Discussion 2</u> : The Great Pacific Garbage Patch	
3	W Sep 05	5. Marine biodiversity 1	Chapter 11, p.279-292
	F Sep 07	6. Marine biodiversity 2	Chapter 11, p.292-306
4	M Sep 10	7. Plankton and plankton communities 1	Chapter 7, p.167-184
	W Sep 12	8. Plankton and plankton communities 2	Chapter 9, p.225-228, 233-240, 247-250
	F Sep 14	<u>Discussion 3</u> : Phytoplankton	
5	M Sep 17	9. Nekton	Chapter 8, p.187-194, 201-207
	W Sep 19	10. Open sea processes	Chapter 10, p.258-274
	F Sep 21	<u>Discussion 4</u> : Marine mammals	
6	M Sep 24	11. Fisheries and fisheries science 1	Chapter 18, p.529-543
	W Sep 26	12. Fisheries and fisheries science 2	Chapter 18, p.543-560
	F Sep 28	<u>Discussion 5</u> : Sustainable fisheries	
7	M Oct 01	13. Rocky shore communities 1	Chapter 14, p.355-365
	W Oct 03	14. Rocky shore communities 2	Chapter 14, p.365-375
	F Oct 05	<u>Discussion 6</u> : Sea turtles	
8	M Oct 08	15. Shallow soft-substratum communities	Chapter 14, p.375-385; chapter 13 (skim)
	W Oct 10	MIDTERM EXAM	
	F Oct 12	16. Salt marshes	Chapter 14, p.385-394

9	M Oct 15	17. Mangroves	Chapter 14, p.394-400
	W Oct 17	18. Estuaries	Chapter 14, p.400-407
	F Oct 19	<u>Discussion 7</u> : Estuaries and salt marshes	
10	M Oct 22	19. Seagrass beds	Chapter 15, p.413-418; Chapter 12 (skim)
	W Oct 24	20. Kelp forests	Chapter 15, p.418-432
	F Oct 26	<u>Discussion 8</u> : Mangroves and seagrass	
11	M Oct 29	21. Coral reefs 1	Chapter 15, p.432-445
	W Oct 31	22. Coral reefs 2	Chapter 15, p.445-454
	F Nov 02	<u>Discussion 9</u> : Coral reefs	
12	M Nov 05	23. Continental Shelf to the Deep Sea 1	Chapter 16, p.463-477
	W Nov 07	24. Continental Shelf to the Deep Sea 2	Chapter 16, p.477-487
	F Nov 09	<u>Discussion 10</u> : The Deep Sea	
13	M Nov 12	25. Disturbance, pollution, and climate change 1	Chapter 19, p.564-569
	W Nov 14	26. Disturbance, pollution, and climate change 2 - <i>Term Paper due</i> -	Chapter 19, p.570-576
	F Nov 16	27. Disturbance, pollution, and climate change 3	Chapter 19, p.576-586
		Nov. 18-25 Thanksgiving Recess	
14	M Nov 26	28. Polar Seas 1	Reading posted in ICON
	W Nov 28	29. Polar Seas 2	Reading posted in ICON
	F Nov 30	<u>Discussion 11</u> : Polar Seas	
15	M Dec 03	30. Marine conservation 1	Chapter 17, p.492-508
	W Dec 05	31. Marine conservation 2	Chapter 17, p.510-522
	F Dec 07	<u>Discussion 12</u> : Marine protected areas, marine reserves, managed zones	