

Bio. 11501-Intro to Marine Bio Lec.
MWF 10-10:50, 3 semester credits, H 17
Bio. 115L01-Intro to Marine Bio Lab.
W 2-4:50, 1 semester credit, H 8
Chaminade University of Honolulu

Fall 2002
August 26, 2002 to
December 12, 2002
Instructor:
Ronald M. Iwamoto

COURSE OUTLINE AND SYLLABUS

Text:

1. Nybakken, James W. 2001 (5th ed.) Marine Biology: An Ecological Approach. Harper Collins, N.Y., N.Y.
2. There is no laboratory manual that needs to be purchased. Hand-outs will be given for each lab.

COURSE OBJECTIVES: The course is designed to fulfill the following objectives:

1. To present the basic facts, concepts, and principles of marine biology;
2. To examine marine organisms and ecosystems or habitats, especially intertidal and coral reef ecosystems.
3. To provide the student with information of a practical nature about marine organisms and their habitats, such as products from organisms and identification of venomous or toxic marine organisms and remedies for them; and
4. To discuss current topics relating marine biology to other fields, such as history, economics, and social sciences. Thus, topics including ocean thermal energy conversion, fisheries and/or mariculture, whaling, and foods from the sea in health and welfare will be examined.

STUDENT OBJECTIVES: At the completion of the course, the student will be able to:

1. Identify marine ecosystems or habitats and present characteristics of the ecosystems, including those visited on lab field trips (lecture and lab);
2. Give examples of plants and animals of marine ecosystems (lecture and lab);
3. Give examples of applied marine biology, such as products from organisms, identification of venomous organisms and remedies for the venoms;
4. Explain a current topic in marine biology, such as food from marine extracts and medication from marine organisms;
5. Explain the relationship between marine biology and other disciplines, such as law (of the sea) and marine biology.
6. Use a microscope to examine marine specimens (lab.); and
7. Give an example of Hawaiian endemic (found only in Hawaii) marine plant or animal (lab).

1. Lectures are MWF 10-10:50 for approximately 1 hour for 15 weeks. Lecture topics are listed on a separate outline together with text assignments. Topics and assignments may be altered during the semester.
2. Laboratories are W 2-4:50 for approximately 3 hours for 15 weeks. Laboratory topics and assignments, like those for lecture, are listed on a separate outline. Please prepare assignments prior to attendance at laboratories. Topics and assignments may be altered, especially with respect to weather and tides. Several labs will be in the field and entail travel to sites.

GRADE DETERMINATION:

1. Separate grades will be given for lecture and laboratory. It is possible to receive different grades for lecture and laboratory.
2. Quizzes, announced and unannounced, will be given in lecture. At the end of the semester, the student may substitute the total quiz score, based on 100%, for one of the lecture exams, but not the final exam.
3. Each student will submit 5 summaries of current events in the marine biology field. Each summary will be worth 10 points and the instructions and requirements for the written summaries are given on a separate page. Summaries will be included as part of the lecture grade.
4. Lecture grades will be determined in the following manner.

		<u>Grading scale</u>
Lecture Exam 1	100 pts.	90% = A
Lecture Exam 2	100 pts.	80% = B
Summaries (5 summaries @ 10 pts.)	50 pts.	70% = C
Two Hour Comprehensive Final Exam	150 pts.	50% = D
	400 pts.	below 50% = F

5. Lecture exams will include 10 extra credit points each, while the final exam will **not** include extra credit points. The final exam is comprehensive and 50% of the exam includes questions given in lecture exams 1 and 2.
6. Laboratory grades will be determined in the following manner with the same grading scale as in lecture.

Laboratory Exam 1	100 pts.
Laboratory Exam 2	100 pts.
Laboratory Notebook (graded twice)	100 pts.
	<u>300 pts.</u>

7. Laboratory notebooks are graded twice and are due on the lab exam dates. They are graded on the basis of completeness, organization, and correct answers to the questions on the hand-outs. Please refer to the lab notebook hand-out for procedures.
8. Laboratory exams are station exams with students moving from station to station answering questions at each station. Each laboratory exam contains 10 extra credit points. The second lab exam is not comprehensive and includes material covered since the first exam.
9. Quizzes, announced and unannounced, will be also given in lab and the score (total percentage based on 100%) may be substituted for either lab exam.

POLICIES, CLASS STANDING, OFFICE HOURS, AND EXTRA HELP:

1. Attendance is expected for each lecture and laboratory. Attendance for lab is especially important and unexcused absences for lecture or laboratory will result in grade penalties to be determined by the instructor.
2. Quizzes and exams missed because of unexcused absences can not be made up. Excused absences should be documented, e.g., a physician's excuse, and will be considered by the instructor for a valid absence.
3. Incompletes and early exams are not given.
4. Students may obtain their grades at any time from the instructor. Those with deficient grades will be notified prior to the withdrawal deadline of **November 8, 2002**.
5. Peer tutoring is available. Please consult the instructor for tutoring.
6. The instructor's office is in Henry Hall, Room 16, phone 735-4808 (faculty secretary = 735-4739 or 735-4757), e-mail = riwamoto@chaminade.edu. Office hours are posted outside the faculty office in Henry Hall and outside the library. If you cannot see me during office hours, please see me to make an appointment.
7. Please note that it is biology department policy to reduce grades by one grade level for late assignments and assignments later than 24 hours are not accepted resulting in a F grade.
8. Those students with special needs, e.g., learning disabilities, should consult with the instructor during the first or second week of classes and not wait till the end of the semester.
9. Because electronic devices, such as cellular phones and pagers, can be disruptive to normal classroom activities, please turn off these devices during class.
10. Extra credit work is not normally given in the course.

MARINE BIOLOGY SUMMARIES AND LAB NOTEBOOK

Marine Biology Summaries:

1. The objectives of the summaries are threefold:
 - a. To read and report on current topics in marine biology;
 - b. To offer an alternative to quizzes and examinations; and
 - c. To participate in "Writing Across Disciplines"; compositions in each area of the university curricula. This should help you develop the ability to research and write about selected topics.
2. There will be five, one to two paged summaries. Each summary will be worth 10 points and the total will be 50 points that are counted in the lecture grade.
3. The summaries must be from a 2002 publication of a newspaper, magazine, journal, or internet/web pages which must be pertinent to the marine biology field, e.g., not on freshwater or terrestrial biology.
4. Summaries are to be word processed or typed following university writing standards. The summary must include: author, title of article; title of journal, magazine, or newspaper with titles of sources, e.g., newspapers italicized or underlined; date of publication; page number(s). Please use the following for web site publications:
Author (if known). "Title" (main title if applicable).
Last date updated or revised (if known. <URL> (date accessed).

Example: Mestel, R. (March 2001). Drugs from the Sea. *Discover*, Vol. 20 No. 3 Available: http://www.discover.com_99/drugs.html, Date accessed 1/25/02.
5. Please submit a xerox copy of the article or internet/web page print out of the article with your summary. If you utilize National Geographic or Hawaii Fishing News, articles, you need not xerox the article as the instructor has subscriptions to the above.
6. Due dates for summaries are listed on the course outline. Please submit both summaries and lab notebooks on time as there are penalties for lateness, reduction in one grade level for submissions within 24 hours of the deadline and F for those after 24 hours of the deadline.
7. Examples of summaries are available for examination during the first weeks of classes.

Laboratory Notebook:

1. The notebook may be a folder, spiral bound or other notebook material. It is to include the following listed in a mandatory table of contents preceding the lab exercises:
 - a. title or topic of the exercise;
 - b. date of exercise;
 - c. page numbers using your own numbering.

2. Observations, drawings, notes, data, and answers to questions asked on the hand-outs must be included in the notebook.
3. Previous students have found it is best to keep separate lecture and laboratory notebooks since you will receive many hand-outs for lecture and laboratory.
3. Lab hand-outs may be included in the notebook, but inclusion is left to the discretion of the student.
4. Please do not expect the instructor to read notes written on the hand-outs, nor answers to questions written on the hand-out. Separate pages are required or points will be deducted.
5. Laboratory notebooks are due at the time of the lab exams, the first and second lab exams.
6. Examples will be available for examination the first two weeks of classes only.

4	SEPT	16	M	The Marine Environment: Ocean Movement Cont'd...; Video on Tsunamis	
		18	W	The Marine Environment: Classification	Chapt. 1 p. 32-33
		20	F	Ecological Principles	Review Chapt. 1 pp. 15-22, QUIZ
5	SEPT	23	M	Plants of the Sea	Chapt. 5 p. 201-210 "Kelp Beds.. to Sea Grass Comms, Chapt. 8 pp. 348-352 "Salt Marshes", Chapt. 9 pp. 416-426 "Mangrove Forests"
		25	W	Plants of the Sea Cont'd...	
		27	F	Video: "Forest in the Sea"	
6	SEPT	30	M	FIRST LECTURE EXAM-INCLUDING PLANTS OF THE SEA	
	OCT	2	W	Productivity of Plankton & Seaweeds	Chapt. 2 pp. 38-93
		4	F	Benthic & Sea Ice Communs.	Chapt. 5 pp. 179-195, 220-235
7	OCT	7	M	Intertidal Ecology: Rocky Shorelines	SUMMARY 2 DUE Chapt. 6 pp. 236-276
		9	W	Intertidal Ecology: Rocky Shorelines Cont'd...	Chapt. 6 pp. 276-292
		11	F	Intertidal Ecology: Sandy Shorelines	Chapt. 6 pp. 292-308, Skim Chapt. 7, QUIZ
8	OCT	14	M	Discoverers' Day, No classes	
		16	W	Intertidal Ecology: Estuaries	Chapt. 8 pp. 328-369
		18	F	Intertidal Ecology Video: "Margins of the Land"	Review Chapt. 9 pp. 416-426

9	OCT	21	M	Intertidal Ecology: Estuaries	
		23	W	Coral Reefs: Characteristics and Types	Chapt. 9, pp. 370-433
		25	F	Coral Reefs: Zonation and Ecology	QUIZ
10	OCT	28	M	Coral Reefs: Interactions & Fish	SUMMARY 3 DUE
		30	W	Coral Reefs: video-"The Coral Triangle"	
	NOV	1	F	SECOND LECTURE EXAM-INCLUDING INTERTIDAL ECOLOGY	
11	NOV	4	M	Symbiosis, coloration & bioluminescence	Chapt. 10 pp. 434-457, Chapt 3 pp. 106-107 "cryptic color.", Chapt. 4 pp. 144-color, Chapt. 4 pp. 152-154
		6	W	Venomous and Toxic Marine Organisms	Hand-Outs
		8	F	Video on Sharks	
			LAST DAY TO WITHDRAW	SUMMARY 4 DUE FROM CLASS	
12	NOV	11	M	VETERAN'S DAY, No Classes	
		13	W	Nekton: Composition & Adaptations	QUIZ Chapt. 3, pp. 94-132
		15	F	Nekton: Fish	
13	NOV	18	M	Nekton: Mammals	
		20	W	Video on Mammals	Chapt. 4 pp. 133-178
		22	F	Birds & Reptiles	
14	NOV	25	M	Abyssal Biology	
		27	W	Abyssal Biology	Chapt. 11 pp. 458-493
		28-29 THANKSGIVING RECESS, No Classes			

DEC	2	M	Abyssal Biology: Hydrothermal Vents	SUMMARY 5 DUE
15	4	W	Fisheries	
	6	F	Marine Resources	

16 **FINAL TWO HOUR COMPREHENSIVE EXAM, THURSDAY, DECEMBER 12, 2002, HENRY HALL ROOM 17, 10:30-12:30 AM**

IMPORTANT DATES: SEPT 3 TUESDAY, LAST DAY TO ADD/DROP

NOV 8 FRIDAY, LAST DAY TO WITHDRAW

DEC 9-12 FINAL EXAMINATION WEEK

COURSE OUTLINE-SUBJECT TO CHANGE

BIO 115L01	(1 CR.)	Intro to Marine Biology Lab	Mr. R. Iwamoto
Dept. No.	Crs.#	Title	Instructor

WEEK	DATE	ASSIGNMENT	
1	AUG 28 W	Introduction: Course Outline and Syllabus; Water Safety Signs, Microscopy: Parts & Functions; Rules/Regulations of Field Trips	Handouts 1) Mic. Diagram 2) Mic. Appendix 3) Water Safety Signs
2	SEPT 4 W	Dichotomous Keys of Fish, Seaweeds, & Invertebrates Seaweeds: Observation & Identification of Preserved and Fresh Specimens; Pressing of Seaweeds Sampling of Seaweed Products Plankton: Slides	Handouts 1) Fish Key 2) Algae Key 3) Invert. Key Handouts 1) Seaweed & Plankton 2) Plankton Diagrams
3	SEPT 11 W	Paiko Coral Reef Field Trip Coral Reef Ecosystem, Physical Factors Measurement: pH, temp., and salinity	1) Microscope Quiz 2) Paiko Handout
4	SEPT 18 W	Plankton Slides Cont'd... Plankton: Preserved and Live Specimens from Plankton Tow	
5	SEPT 25 W	Lanai Lookout and Sandy Beach Rocky Shoreline & Tidepool Field Trip Physical Factors Measurements	<u>QUIZ ON SEAWEEDES & PLANKTON</u> Handout 1) Lanai Lookout & Sandy Beach Tidepools

	OCT	2	W	Rocky Shoreline, Sand Beach & Estuarine Organisms line,	1) Rocky Shore- beach, & Estuary Orgs.	Handout 6 sand
7	OCT	9	W	<u>FIRST LAB EXAM & LAB NOTEBOOKS DUE</u>		
8	OCT	16	W	Coral Diversity	Handout 1) Coral Diversity	
9	OCT	23	W	Waikiki Aquarium	Handout 1) Questions for Waikiki Aquar.	
10	OCT	30	W	Crab, Clam, Starfish Dissection	Handouts: Crab, Clam, & Starfish	
11	NOV	6	W	Kaloko Cove Estuary Field Trip: Estuarine Environment; Physical Factors Measurements; & Hawaiian Plants	Handouts 1) Kaloko Cove & Coastal Plants	
12	NOV	13	W	Dangerous & Venomous Marine Organisms	QUIZ ON DISSECTIONS & COASTAL PLANTS Handouts 1) Dangerous & Venomous Orgs. 2) Sharks 3) Fish Poisoning	
13	NOV	20	W	Fish Dissection & Diversity	Handout 1) Fish Dissec. & Diversity	

14 NOV 27 W Sea Life Park

15 DEC 4 W SECOND LAB EXAM FROM CORALS TO FISH DISSECTION
AND DIVERSITY, LAB NOTEBOOKS DUE

IMPORTANT DATES: SEPT 3 TUESDAY, LAST DAY TO ADD/DROP

OCT 9 WEDNESDAY, FIRST LAB EXAM AND LAB BOOKS
DUE

NOV 8 FRIDAY, LAST DAY TO WITHDRAW

DEC 4 WEDNESDAY, SECOND LAB EXAM AND LAB BOOKS
DUE