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Bio. 11501-Intro to Marine Bio Lec.
MWF 11-11:50, 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

Spring 2000
January 18, 2000 to
May 11, 2000
Instructor:
Ronald M. Iwamoto

COURSE OUTLINE AND SYLLABUS

Text:

1. **Nybakken**, James W. 1997 (4th 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 Hawaiian marine organisms and habitats, especially intertidal and coral reef environments;
3. To provide the student with information of a practical nature about marine organisms and their habitats, such as products from organisms and remedies for venomous or toxic marine organisms; 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 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. Present a summary of marine habitats and give examples of characteristics organisms;
2. Give examples of applied marine biology, such as products from organisms;
3. Discuss a current topic in marine biology;
4. Use a microscope to examine marine specimens (lab.); and
5. Discuss specific marine habitats and organisms observed on field trips (lab).

LECTURES AND LABORATORIES:

1. Lectures are MWF 11-11:50 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.

		Grading scale
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	<u>150 pts.</u>	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)	<u>100 pts.</u>
	300 pts.
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.
10. No extra credit work may be completed in the course.

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 April 10, 2000.
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 = 735-4793 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.

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 the curriculum," 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 1999 or 2000 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 1999). Drugs from the Sea. Discover, Vol. 20 No. 3 Available: <http://www.discover.com> 99/drugs.html, Date accessed 3/8/99.
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.

CHAMINADE UNIVERSITY WRITING STANDARDS

All work submitted by Chaminade University students must meet the following Writing Standards. Written assignments which fail to meet these standards will not be accepted by Chaminade University faculty unless alternative criteria have been specified by an instructor for a particular assignment.

- (1) A Paper must have a title page on which the writer gives the title, his or her name, the course title, and the data of submission. for short papers, it is usually adequate to provide this information on the first page of the paper.
- (2) A paper must adhere to accepted manuscript format.*
 - a) It must be typed on white 8 1/2" by 11" paper (except for in-class essays).
 - b) It must be double-spaced and typed on only one side of the paper.
 - c) It must have adequate margins on top, bottom, and sides.
 - d) References and/or footnotes must be used in accordance with standards specified by the instructor. In the absence of such specification, the writer should use standards given in English 102.
- (3) A paper must adhere to conventional standards for written expression.
 - a) It should be free of errors in spelling, punctuation, Capitalization and grammar.
 - b) The vocabulary and syntax should be appropriate to the assignment.
 - c) The writer should use proper sentence construction and coherent paragraphing.

*See the handbook of English recommended by the English Department for a complete list of manuscript requirements.

WRITING ASSISTANCE

The Chaminade Learning Center provides assistance for students in proofreading and correcting their written assignments. A writing clinic and tutorials are available to students at no cost to assist them in the mastery of basic writing skills. Typing instruction is available at several locations near Chaminade University and there are also lists of student typists available in the Learning Center.

CHAMINADE UNIVERSITY OF HONOLULU
Honolulu, Hawaii 96816

SESSION: SPRING 2000
DAY ON CAMPUS

COURSE OUTLINE-SUBJECT TO CHANGE

BIO	<u>11501</u>	(3 crs)	<u>Intro to Marine Biology</u>	Mr. R. Iwamoto
Dept.	No.	# Crs.	Title	Instructor

WEEK	DATE	ASSIGNMENTS
	JAN 17 M	FATHER CHAMINADE, MARTIN LUTHER KING JR. HOLIDAY NO CLASSES
1	19 W	Introduction: Syllabus & Course Outline Chapt. 1 pp. 1-35
	21 F	Founders Day & Spiritual Convocation Mass, No 11am classes
2	JAN 24 M	Film: "The Sea," Begin Marine Biology & Society: International Relations, Economics, & Social Structure LAST DAY TO ADD/DROP CLASSES Castro & Huber Reference on Reserve in Library
	26 W	Marine Biology & Society: Cont'd from above & Marine Resources-OTEC, Minerals & Fisheries Chapt. 11 pp. 425- 430 "Overexploit. to New Fisheries" p. 443, "Drugs from the Sea"
	28 F	Marine Biology Society: Climate, Waves, & Currents; Food & Health; and Recreation
3	JAN 31 M	The Marine Environment: General Features of the Ocean, Tectonics, & Topography Chapt. 1 p. 8 LECTURE QUIZ 1
	FEB 2 W	The Marine Environment: Sea Water Properties-temperature, salinity, gases, and nutrients
	4 F	The Marine Environment: Ocean Movement-Waves, Tides, and Currents <u>SUMMARY ONE DUE</u> Chapt. 6 pp. 219- 223 "Tides" Review Chapt. 1 pp. 10-15

4	FEE	7	M	The Marine Environment: Ocean Movement Cont'd...; Video on Tsunamis	
		9	W	The Marine Environment: Classification	Chapt. 1 p. 32-33
		11	F	Ecological Principles	Review Chapt. 1 pp. 16-22
5	FEE	14	M	Plants of the Sea	Chapt. 5 p. 194 "Kelp Beds..
		16	W	Plants of the Sea Cont'd...	to Sea Grass Comms Chapt. 8 pp. 324-335 "Salt Marshes"
		18	F	Video: "Forest in the Sea"	Chapt. 9 pp. 377-388 "Mangrove Forests"
6	FEB	21	M	PRESIDENT'S DAY, NO CLASSES	
		23	W	FIRST LECTURE EXAM-INCLUDING PLANTS OF THE SEA	
		25	F	Productivity of Plankton & Seaweeds	Chapt. 2 pp. 36-88
8	FEB	28	M	Benthic & Sea Ice Communs.	Chapt. 5 pp. 165-185, 202-215
		1	W	Intertidal Ecology: Rocky Shorelines	<u>SUMMARY TWO DUE</u> Chapt. 6 pp. 219-252
		3	F	Intertidal Ecology: Rocky Shorelines Cont'd...	Chapt. 6 pp. 252-255
9		6	M	Intertidal Ecology: Sandy Shorelines	Chapt. 6 pp. 255-270, Skim Chapt. 7, <u>LECTURE QUIZ</u>
		8	W	Intertidal Ecology: Estuaries	Chapt. 8 pp. 304-337
		10	F	Intertidal Ecology Video: "Margins of the Land"	Review Chapt. 9 pp. 377-388
9	MAR	13	M	Intertidal Ecology: Estuaries	
		15	W	Coral Reefs: Characteristics and Types	Chapt. 9, pp. 338-337
		17	F	Coral Reefs: Zonation & Ecology	<u>LECTURE QUIZ</u>

10	MAR	20	M	Coral Reefs: Interactions & Fish	<u>SUMMARY THREE</u> DUE
		22	W	SECOND LECTURE EXAM-INCLUDING	INTERTIDAL ECOLOGY
		24	F	Coral Reefs: video-"The Coral Triangle"	
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	MAR	27-31		SPRING RECESS, NO CLASSES	
11	APR	3	M	Symbiosis, coloration & bioluminescence	Chapt. 10 pp. 395-377, Chapt 3 pp. 101-102 "cryptic color." Chapt. 4 pp. 135-color, Chapt. 4 pp. 141-145
		5	W	Venomous and Toxic Marine Organisms	Hand-Outs
		7	F	Video on Sharks	SUMMARY FOUR DUE
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	APR	10	M	Nekton: Composition & Adaptations	<u>LECTURE QUIZ</u> Chapt. 4, pp. 124-164
12		12	W	Nekton: Fish	
		14	F	Nekton: Mammals	
13	<hr/>				
	APR	17	M	Video on Mammals	
		19	W	Birds & Reptiles	
		21	F	GOOD FRIDAY, NO CLASSES	
14	<hr/>				
	APR	24	M	Abyssal Biology	Chapt. 11 pp. 418-425
		26	W	Abyssal Biology: Hydrothermal Vents	SUMMARY FIVE DUE
		28	F	Fisheries	

MAY 1 M Fisheries

15 3 W Marine Resources

5 F Review

16 FINAL **TWO** HOUR COMPREHENSIVE EXAM, WEDNESDAY, MAY 10,
2000, HENRY HALL ROOM 17, 10:30-12:30 AM

IMPORTANT DATES: JAN 24 LAST DAY TO ADD/DROP

APR 10 LAST DAY TO WITHDRAW

*MAY 10 FINAL **EXAMINATION** DATE*

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Honolulu, Hawaii 96816

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DAY ON CAMPUS

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BIO 115L01	(1 CR.)	Intro_ to. Marine <u>Biology Lab</u>	Mr. R. Iwamoto
Dept. No.	Crs.#	Title	Instructor

WEEK	DATE	ASSIGNMENT
1	JAN 19 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	JAN 26 W	Dichotomous Keys of Fish, Seaweeds, & Invertebrates Handouts 1) Fish Key 2) Algae Key 3) Invert. Key
3	FEB 2 W	Paiko Coral Reef Field Trip: Coral Reef Ecosystem; Physical Factor Measurement: pH , temp., & salinity <u>MICROSCOPE QUIZ</u> Handout 1) Paiko field trip
4	FEB W	Seaweeds Observation Identification of Preserved and Fresh Specimens; Pressing of Seaweeds Collected on 2/2/00; and Sampling of Seaweed Products Plankton: Slides Handouts 1) Seaweed & Plankton 2) Plankton Diagrams
5	FEB 16 W	Plankton Slides Cont'd... Plankton: Preserved and Live Specimens from Plankton Tow

FEB	23	W	Lanai Lookout and Sandy Beach Rocky Shoreline & Tidepool Field Trip Physical Factors Measurements	<u>QUIZ ON SEaweEDS & PLANKTON</u> Handout 1) Lanai Lookout & Sandy Beach Tidepools
	1	W	Rocky Shoreline, Sand Beach & Estuarine Organisms	Handout 1) Rocky Shore- line, sand beach, & Estuary Orgs.
	8	W	<u>FIRST LAB EXAM & LAB NOTEBOOKS DUE</u>	
9	MAR 15	W	Coral Diversity	Handout 1) Coral Diversity
10	MAR 22	W	Waikiki Aquarium	Handout 1) Questions for Waikiki Aquar.
11	MAR 27-31 SPRING RECESS, NO CLASSES			
	APR 5	W	Crab, Clam, Starfish Dissection	Handouts 1) Crab, Clam & Starfish Dissection
12				
	APR 12	W	Kaloko Cove Estuary Field Trip:	QUIZ ON DISSECTIONS Handouts
13			Estuarine Environment; Physical Factors Measurements; & Hawaiian Plants	1) Kaloko Cove & Coastal Plants

14	APR 19 W	Dangerous & Venomous Marine Organisms	QUIZ ON COASTAL PLANTS Handouts 1) Dangerous & Venomous Orgs. 2) Sharks 3) Fish Poisoning
15	APR 26 W	Fish Dissection & Diversity	Handout 1) Fish Dissec. & Diversity
16	MAY 3 W	SECOND LAB EXAM FROM CORALS TO NO DISSECTION AND DIVERSITY. LAB NOTEBOOKS DUE	

IMPORTANT DATES: JAN 24 LAST DAY TO ADD/DROP

MAR 8 FIRST LAB EXAM AND LAB BOOKS DUE

APR 10 LAST DAY TO WITHDRAW

MAY 10 SECOND LAB EXAM AND LAB BOOKS DUE