

**Syllabus**  
**Biology 319**  
Non-majors upper-division GE category III.A.3  
**Marine Biology**  
Spring, 2008 Schedule # 18547  
MH287: MW 5:30-6:45

**Prof.: Douglas J. Eernisse**

**Phone: 278-3749 (x 3749)**

**Email: [deernisse@fullerton.edu](mailto:deernisse@fullerton.edu)**

**Office: MH217C (enter MH207 after calling x3749 outside door)**

**Office Hrs.: Tues. 1:00 – 5:00 p.m.**

**Course Web Home Page: <http://biology.fullerton.edu/biol319/>**

**(We will not use the course Blackboard site unless otherwise announced)**

**Prerequisites:** This course is an upper-division biology course in Natural Sciences and Mathematics and as such it is not appropriate for majors in Biology. The prerequisites are the successful prior completion of either GE category III.A.1. or III.A.2 or permission of the instructor.

**Objectives:** To gain appreciation and familiarity with the field biology and natural history of local marine plants and animals. Emphasis will be on understanding and applying scientific approaches for determining the distribution, abundance, and interactions between marine animals, plants, and other organisms in a variety of different marine habitats. A primary goal is to integrate understanding of ocean processes, earth history, and the ecology and evolution of marine life. Also emphasized are the real and potential effects of human activities on marine organisms, as well as understanding their impact and importance to humans. The course objectives are designed to satisfy the CSUF requirements for GE category III.A.3 (see p. 6).

**Required Materials:** The textbook, *Marine Life and the Sea* (David H. Milne) is required. *Between Pacific Tides* (Edward F. Ricketts et al., 6<sup>th</sup> or any older edition) is an excellent book and is highly recommended, as is a newly published book, *Encyclopedia of Tidepools and Rocky Shores* (2007; Univ. of Calif. Press), and expect that you will be required to read some of the short entries from it, provided as hand-outs. Additional reading could also be provided as handouts. This course will also involve frequent use of extensive web links related to the covered text topics have been developed and will be maintained and expanded during this semester. If you do not have home or wireless access to the web or if you prefer the much faster interface of an on-campus connection, you are encouraged to use computers in the campus Titan Lab:

[http://www.fullerton.edu/it/services/Computing\\_Labs/TitanLab/](http://www.fullerton.edu/it/services/Computing_Labs/TitanLab/). See:

<http://www.fullerton.edu/it/services/Networks/Wireless/index.asp> for campus Wi-Fi sites or other free local wireless networks, including the free Wi-Fi zone for the entire downtown Fullerton area (see: <http://www.fullertonwireless.com/>) or at various cafes and

restaurants listed at <http://www.wififreespot.com/ca.html>. Material on our course web site is considered an integral part of this course, not just supplementary material, so expect that I might ask you in lecture to consult particular course web pages or linked web sites, or may post reviews for exams to the web site. In addition to our main course website we might use other web sites, as announced in class. Even though there is a large amount of material on the web pages I have set up for this course, especially more links to other websites than I expect you to ever view completely, I will expect that when I draw your attention to particular material or links on the web during lecture then this material will be considered fair game for quizzes and exams, or as primary research resources useful for preparing various oral presentations you will be assigned during the course of the semester. Some additional reading assignments will be provided to you as handouts, and will usually substitute for text reading in such cases.

In general, expect me to give a brief quiz at the start or at sometime during many or most scheduled class times, so you will **always** need to be ready with a blank sheet of paper for **every** class session.

**Grades:** The following summarizes approximate points you can earn towards your final grade (estimates for the number of quizzes and assignments are tentative):

|   |                  |
|---|------------------|
| 3 Exams (100 pts. each; the exam in Finals Week is not comprehensive) | 300              |
| Quizzes (5 pts. each)   | 80               |
| Take home essay assignment with opportunities for revision            | 40               |
| In-class activities (5 to 10 pts.)                                    | 30               |
| Web assignments   | 30               |
| Fieldtrip/Activities assignment                                       | 40               |
| Regular attendance (estimated from quizzes or roll taking)            | 30               |
| Regular participation in discussions (estimated by instructor)        | 50               |
| <b>Total Points</b>   | <b>up to 600</b> |

The following +/- grading scale will be used in this course (% of total available points):

|           |               |           |              |
|-----------|---------------|-----------|--------------|
| <b>A</b>  | <b>92-100</b> | <b>C</b>  | <b>69-71</b> |
| <b>A-</b> | <b>88-91</b>  | <b>C-</b> | <b>66-68</b> |
| <b>B+</b> | <b>85-87</b>  | <b>D+</b> | <b>60-65</b> |
| <b>B</b>  | <b>80-85</b>  | <b>D</b>  | <b>55-59</b> |
| <b>B-</b> | <b>77-79</b>  | <b>F</b>  | <b>0-54</b>  |
| <b>C+</b> | <b>72-76</b>  |           |              |

These cut-off levels are based on my experience in how students perform in all of my classes, and will never be raised but they might be lowered in your favor. Lowering the cut-off scores on the point distributions in the class would depend on my own assessment of how the final scores reflect the overall performance of students in the class. In general, I prefer to adjust individual exams instead of the final cut-off scores if I find that the exam was more difficult than intended.

As indicated on the attached schedule, this course will be divided into three units. There will be three exams (100 points each) at the end of Units 1, 2 and 3 (the last during Finals Week). Note that exams comprise only half of the total points that you can earn in this course. Regular in-class or online quizzes will generally be worth 5 points each. Expect that you will be asked to complete a brief quiz at the beginning of each class session (although some sessions will have no quiz). In order to prepare for the exams or quizzes, expect to be asked identical or similar questions to the review questions posted online on the website or questions that I pose at my summary of student-led discussions. Exam questions will also be variations on these questions, including those already asked as quiz questions.

There will be one essay writing assignment (40 point). The latter will be returned with an opportunity a revision to earn up to half of the points missed when first evaluated. A rubric will be used to assess whether the writing is competent and whether it clearly expresses the complex data or ideas in an organized manner. Also expect several in-class activities (5 or 10 points each) related to lecture assignments or activities, probably performed in small groups. Such activities are good opportunities to cooperate with other students to boost your individual percentage of total points earned, and thus improve your individual course grade. Because this is a seminar course, you will be expected not only to be a regular participant in discussions but will also be expected to lead parts of three to six class meetings, generally with one or more other assigned co-leader. You will begin each of these sessions with a brief presentation in order to stimulate class discussion.

Written assignments must be turned in at the beginning of the lecture on the announced due date, with late papers subject to a deduction starting at 10 percent and increasing with time. Still, it is much better to turn in an assignment late than not at all. A physician's note may be required in the event that you have missed an exam due to illness. In this case, I will decide whether you are entitled to either take a make-up exam or whether I will pro-rate your other scores to assign a score for the missed exam. There will be no make-up quizzes and it is typical for most students to miss one or two quizzes, but I might pro-rate one or more missed score(s) if you have a valid excused absence.

**Extra Credit:** A modest number of extra credit points will be awarded for attending relevant seminars or other presentation events related to topics we cover. These will include any seminars in the Biology Seminar Series (W at 4 p.m., MH-513; see <http://biology.fullerton.edu/events/>) and I will announce other special seminars that qualify. There are four special seminars offered early in the semester as part of the Department of Biological Science's job search for a marine biologist that would be particularly appropriate, including the first on Jan. 30, 4 p.m., MH513, the second on Tues., Feb 5, 1-2 p.m., LH-403, the third on Tues., Feb. 12 (Darwin's birthday), 1-2 p.m., LH-403, and the fourth on Wed., Feb. 20, 12-1 p.m., MH502. Others will be announced. I generally am flexible in the sorts of presentation events that I will accept but only rarely will approve a "article report" or a report based on watching a DVD or video. You will also need to turn in a seminar write-up to document your attendance. The seminar write-ups will be worth up to 10 possible points for up to a maximum of two seminars that you attend (20 points total). In case you cannot attend either the regular or special seminars, due to schedule conflicts, you are encouraged to seek out other relevant seminars to attend. See the bulletin board outside MH287 for many posted seminars that will likely

be permitted as substitutes. I will distribute two write-up forms early in the semester but you can also complete these on your own paper or submit them by email. A suggested approach for your write-up is to answer the following questions (although I am quite flexible): 1) What is the basic take-home message? 2) What question(s) would (or did) you ask the speaker? and 3) How can you suggest that this research might be extended? Word processor output is highly preferred over hand-written notes taken during the seminar itself. Take notes but then organize and synthesize in your write-up. Remember, your write-ups need to have thoughtful responses to the above questions or a comparable set of questions of your choosing in order to get the maximum extra credit points possible.

**Assignments:** Expect there to be a considerable amount of reading, selected writing assignments, and much seminar-format discussion throughout this course. Students will lead a portion of most of the class sessions after the first two weeks. You will be expected to read nearly the entire text and a modest number of additional handout articles. If the idea of completing regular reading with written quiz responses or take-home assignments does not appeal to you then PLEASE drop the course now while the process is relatively painless. You will be expected to have read the assigned reading **before** each lecture and have engaged in **active** (not passive) learning. There will not always be a right or wrong answer to an assigned question. I do not want to read exactly what is in your reading. I want you to use your own words and there should be original discussion of the reading material. For those times that I might assign take-home writing assignments, if I find that you have essentially copied portions of the book with minimal rearrangements then you will receive a low score. The use of word processors for completing writing assignments is strongly encouraged. Hand-written papers that are difficult to read will be noted as such and it will be exceedingly difficult to receive an excellent score on them, especially after I have warned you once that I am finding your homework difficult to read. The use of spell-checkers is encouraged. Likewise, please do your very best to make the writing in your regular quizzes and exam essay responses as legible as possible. Please understand that it could take up to a couple of weeks to return a written essay assignment, due to the amount of time devoted to each essay's grading. You will be given an opportunity to earn back subtracted points by rewriting portions of at least one essay, in accordance with campus General Education writing goals (see below). Your proofreading and rewriting efforts will consequently reap just rewards in essay points assigned. Please always feel free to discuss your questions on comments I write on your essays or other exam/quiz questions, especially if you do not understand the concepts behind the question. I encourage you to email questions to me at any time during the semester, and I will generally answer your email well within 48 hours of receipt.

**Rules About Withdrawing from Courses:** CSUF has a policy (UPS 300.016) regarding withdrawal from classes. After the first census date, students may be granted withdrawal (i.e., to receive a "W" grade) only by presentation of documentation outlining a physical, medical or emotional condition that prevents completion of the course. Poor academic performance is not evidence of a serious reason for withdrawal. Students unable to produce official documentation will be required to take the grade they have earned in the class.

**Special Needs:** If you are a student with documented special needs, you have the right to get assistance via the Disabled Student Services Offices, UH 101, (714) 278-3117 or as documented at <http://www.fullerton.edu/disabledservices/>.

**Classroom Behavior:** You are expected to participate in classroom activities. Late entering or early exiting class during the class period is disruptive and should be minimized. Likewise, the use of electronic devices (cell phones, pagers, etc) during class is not permitted. You can use laptops for class use but not for other purposes, including checking email, or surfing the web.

**Academic Integrity:** I assume that by remaining enrolled in this class your intentions are HONORABLE, and that you accept responsibility for dutiful attendance, earnest effort toward understanding the subject and pledge that you will not cheat on exams.

- Plagiarism is the unacknowledged use of another's words or ideas as your own. Use your own words when writing. Use quotation marks and cite the source of any phrase that you "use". Changing one or two words in a sentence is still plagiarism. Just because you referenced a source does not give you the right to insert segments, verbatim, into papers you write. You must put the information into your own words. I may rely on a course account with TurnItIn.com (<http://turnitin.com>) in order to check that you have not plagiarized your essays or other required written assignments.

- Cheating is the use of another's work as your own. Copying another student's homework, looking at another student's exam, and using information from another student to enhance your performance on a task are all examples of cheating.

Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the university. University policies are strictly enforced in this course. Please familiarize yourself with the academic integrity guidelines found in the current student handbook.

**General Education Goals for Student Learning:**

The following are the overall GE goals for courses in Natural Sciences, based on University Policy Statement 411.201:

[http://www.fullerton.edu/catalogprevious/catalog2005-07/academic\\_programs/generaledu.asp](http://www.fullerton.edu/catalogprevious/catalog2005-07/academic_programs/generaledu.asp)

- To understand how different themes of science make connections within and between the different scientific disciplines.
- To apply scientific methodology through active experimental methods and experiences (laboratory/activity).
- To evaluate the validity and limitations of theories and scientific claims in interpreting experimental results.
- To understand the dynamic and evolving nature of the sciences.
- To recognize the importance of scientific paradigms and methods in understanding scientific concepts.

- To solve theoretical or experimental problems that require knowledge of science concepts and scientific reasoning.
- To understand the issues raised by science for contemporary society and to appreciate the relevance and application of science in everyday life.
- To understand that there is synergism between science and technology – advances in science drive new technologies and new technologies make possible new advances in science. The principles of science provide the underpinnings of technology and, consequently, technology should be taught in conjunction with content directly linked to the scientific disciplines.

This course satisfies category IIIA3, Implications and Explorations in Mathematics and Natural Sciences. Courses in this category draw upon, integrate, apply and extend knowledge and skills previously acquired in Category III.A. Disciplinary Learning: Mathematics and Natural Sciences. These courses have a substantial scientific and/or mathematical content and require completion of appropriate courses in Categories III.A.1 and III.A.2 as prerequisites to enrollment. In addition, courses in III.A.3. Implications and Explorations in Mathematics and Natural Sciences include the following goals for student learning:

- To understand broad, unifying themes in mathematics and/or science from cross-disciplinary perspectives.
- To solve complex problems that require mathematical and/or scientific reasoning.
- To relate mathematics and/or science to significant social problems or to other related disciplines.
- When deemed appropriate, to apply disciplinary concepts from mathematics and the natural sciences in a variety of settings, such as community-based learning sites and activities.

### **Classroom Safety Briefing:**

- In the event of an emergency such as earthquake or fire:
  - Take all your personal belongings and leave the classroom. Make your way to the nearest available stairway.
  - Do not use the elevator. They may not be working once the alarm sounds.
  - Go to the lawn area towards Nutwood Avenue. Stay with class members for further instruction.
  - For additional information on exits, fire alarms and telephones, **Building Evacuation Maps** are located near each elevator.
  - Anyone who may have difficulty evacuating the building, please see me after class.
- Dial 911 on any campus phone, pay phone, or blue emergency phones to connect directly to University Police. Dialing 911 on your cell phone will connect with the Highway Patrol. Tell CHP dispatcher that CSUF Police is the responding agency. Stay on the line until asked to hang up.
- There is no smoking within 20 feet of every campus building.



**Marine Biology**  
**Biol. 319 - Prof. Eernisse**  
**California State University, Fullerton**  
**Spring, 2008**

**Class Times: MW 5:30-6:45 in MH287**

**Schedule # 18547**

**Office Hours: Tues. 1-5**

**Office: MH217C (enter MH207 after calling x3749 outside door)**

***Provisional Lecture and Readings Outline***

**Note: Additional required hand-out readings not listed**

**Pages refer to *Marine Life and the Sea* (MLATS) by Milne**

| <b>WEEK</b> | <b>DATE</b>      | <b>LECTURE TOPIC</b>   | <b>ASSIGNMENT</b>  |
|-------------|------------------|--|--|
| 1           | Jan 21<br>Jan 23 | <b>MLK Day - No Class</b><br><b>Course Intro/Oceans of Planet Earth</b>                          | —<br>pp. 1-21 <a href="#">Ch. 1</a>                                    |
| 2           | Jan 28<br>Jan 30 | <b>Ocean floor/Tilt and temperature</b><br><b>Ocean gyres, currents &amp; upwelling</b>          | pp. 1-21 <a href="#">Ch. 1</a><br>pp. 22-39 <a href="#">Ch. 2</a>      |
| 3           | Feb 4<br>Feb 6   | <b>The tides and impact on organisms</b><br><b>Water, salt, temperature, &amp; gases</b>         | pp. 40-50 <a href="#">Ch. 2</a><br>pp. 51-79 <a href="#">Ch. 3</a>     |
| 4           | Feb 11<br>Feb 13 | <b>How organisms use sunlight &amp; sound</b><br><b>Density, viscosity, pressure &amp; depth</b> | pp. 80-105 <a href="#">Ch. 4</a><br>pp. 106-125 <a href="#">Ch. 5</a>  |
| 5           | Feb 18<br>Feb 20 | <b>President's Day - No Class</b><br><b>Exam 1 (Chapters 1-5)</b>                                | —<br>pp. 1-125   |
| 6           | Feb 25<br>Feb 27 | <b>Small organisms and plants in the sea</b><br><b>Animals without backbones - 1</b>             | pp. 126-152 <a href="#">Ch. 6</a><br>pp. 153-169 <a href="#">Ch. 7</a> |

|        |          |   |                             |                        |
|--------|----------|---|-----------------------------|------------------------|
| 7      | Mar 3    | Animals without backbones - 2   | pp. 170-184                 | <a href="#">Ch. 7</a>  |
|        | Mar 5    | Fishes: hagfish, sharks   | pp. 185-193                 | <a href="#">Ch. 8</a>  |
| 8      | Mar 10   | Fishes: herring, salmon, etc.   | pp. 193-207                 | <a href="#">Ch. 8</a>  |
|        | Mar 12   | Marine birds  | pp. 208-215                 | <a href="#">Ch. 9</a>  |
| 9      | Mar 17   | Marine mammals and turtles  | pp. 216-238                 | <a href="#">Ch. 9</a>  |
|        | Mar 19   | Populations, communities  | pp. 240-248                 | <a href="#">Ch. 10</a> |
| 10     | Mar 24   | <b>Exam 2 (Chapters 6-10)</b>   | <b>pp. 126-248</b>          |                        |
|        | Mar 26   | Communities, ecosystems   | pp. 248-261                 | <a href="#">Ch. 10</a> |
| 11     | Mar 30 → | <b>Spring Break!</b>  |                             |                        |
| 12     | Apr 7    | Offshore communities & deep sea   | pp. 293-312                 | <a href="#">Ch. 13</a> |
|        | Apr 9    | Rocky shores, kelp forests  | pp. 313-329                 | <a href="#">Ch. 14</a> |
| 13     | Apr 14   | Mudflats, mangroves & reefs   | pp. 331-346                 | <a href="#">Ch. 14</a> |
|        | Apr 16   | Community and population dynamics   | pp. 347-371                 | <a href="#">Ch. 15</a> |
| 14     | Apr 21   | Long term community change  | pp. 373-389                 | <a href="#">Ch. 16</a> |
|        | Apr 23   | Human impact on the sea   | pp. 399-417                 | <a href="#">Ch. 17</a> |
| 15     | Apr 28   | Impacts of harvesting marine life   | pp. 419-435                 | <a href="#">Ch. 18</a> |
|        | Apr 30   | Global warming and ozone depletion  | pp. 436-458                 | <a href="#">Ch. 19</a> |
| 16     | May 5    | Student Project Presentations   |                             |                        |
|        | May 7    | Student Project Presentations   |                             |                        |
| Finals | May 12   | <b>Exam 3 (pp. 248-261, 293-458 only)</b><br><b>Final Date: Turn in Reports</b> | <b>5:00-6:50 PM - MH287</b> |                        |

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- [Marine Biology Home Page](#)
- Links to [Marine Biology](#) and [Organisms](#)
- [Biological Science Home Page](#)

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