

**BIOLOGY 475**  
**BIOLOGY OF MARINE ANIMALS**  
**Spring Semester 2020**

**Professor:** Dr. Ken Lohmann

**Lectures:** 10:10 – 11:00 a.m. MWF, Wilson Hall room 128

**Course summary:** This course provides a rigorous introduction to marine animals, primarily invertebrates. We will examine the defining characteristics of each major animal phylum while simultaneously studying the behavioral, physiological, morphological, and ecological adaptations of animals that live in the ocean, an environment that encompasses nearly 70% of the Earth's surface.

This course is intended for advanced and highly motivated undergraduates who have strong interests in organismal biology and biodiversity. It is an excellent class for those who are:

- interested in marine biology, ecology, animal behavior, evolution, and conservation biology
- planning to pursue graduate degrees and/or research in fields related to organismal biology
- interested in the environment, environmental law, environmental policy, or related areas
- considering careers in teaching, veterinary medicine, museums/aquaria, or preservation of natural resources
- dedicated naturalists, tidepool walkers, and beach enthusiasts.

**WARNING:** Mastering the biology of marine animals requires dedication and a steady, disciplined effort over a period of months. This course is NOT a good choice for those seeking to fulfill a graduation requirement in the easiest possible way, or for chronic procrastinators unwilling to review material until right before an exam. If this describes you, well ... you've been warned.

**Lab:** Lab is required. The lab part of the course is a separate class (BIOL 475L) but must be taken with BIOL 475. The lab is limited to 4 sections of 15 students (60 students total). For this reason, the course often cannot accommodate all of the students who wish to enroll. If you are enrolled in the class and are considering dropping, please make a decision as soon as possible, so that your classmates on the waiting list can fill any spaces that might become available.

**Teaching Assistants:**

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**Required Text:** Biology of the Invertebrates by Jan A. Pechenik, 7<sup>th</sup> edition, published by McGraw-Hill. Supplementary readings (which can be downloaded from Sakai) will also be assigned on specific topics.

**APPROXIMATE SCHEDULE OF LECTURE TOPICS (expect changes):**

**Week 1:** Introduction to Invertebrates; Gutless Wonders & the Simplicity of Sponges

**Weeks 2-3:** The Beautiful and Brainless: Cnidarians, Ctenophores, and Coral Reefs

**Week 4:** Wormy Wonders: Cestodes, Nemertean, Polychaetes, and their ilk

**Weeks 5-7:** Marine Molluscs: Seashells, Slugs, and Cephalopods

**Week 6-8:** Marine Arthropods: Stomatopods, Crabs, Lobsters, and their buddies

**Weeks 9-10:** Echinoderms: Starfish, Urchins, and Cucumbers

**Week 11:** Minor Invertebrate Phyla

**Weeks 12-14:** Invertebrate Chordates and Marine Vertebrates (Sharks, Sea Turtles, and Whales)

**Office Hour:** Dr. Lohmann's regularly scheduled office hour is Wednesday from 11:15 a.m. to 12:15 p.m. in Coker 403. Other meeting times can be scheduled as needed by appointment. In addition, Dr. Lohmann will nearly always be available to answer questions for a short time immediately after each lecture. Everyone in the class is strongly encouraged to stop by at least once or twice during office hours. Even if you do not have questions about the class material, office hours provide a good opportunity to discuss internships, research opportunities, how to select a graduate program, careers in marine biology, or other matters that may interest you.

**Grading:** Grading will be based on the following:

Three hourly lecture exams @ 100 points: .....	300
Best two of three online quizzes .....	10
Comprehensive Final Exam: .....	140
<b>Total points</b> .....	<b>450</b>

**Exam Dates:**

Hourly Exam I (100 pts):	<b>Monday, February 3</b>
Hourly Exam II (100 pts):	<b>Friday, February 28</b>
Hourly Exam III (100 pts):	<b>Friday, April 3</b>
Final Exam (150 pts):	<b>Monday, April 27 (at 8:00 a.m.)</b>

*Note:* In accordance with UNC policy, the final exam can only be taken at the designated time.

**All lecture exams and the final exam are cumulative and may contain questions on any material covered previously in the course.** The semester grading scale usually approximates a 90-80-70 scale (meaning that the A- to B+ divide is usually about 90%, the B- to C+ divide is usually about 80%, and so on). However, slight adjustments to the scale are occasionally made if one or more exams proves to be unexpectedly difficult (or easy).

**Online Quizzes:** To help everyone get off to a good start in the class, there will be three online quizzes during the first month of the semester. These are intended to encourage regular review of material and also provide practice for some of the questions that will be on hourly exams. Online quizzes should be taken individually, but all notes and the textbook can be used. Each 15-minute quiz will consist of five multiple choice questions, each worth one point, for a total of five points per quiz. The topics covered on each quiz will be revealed in lecture several days prior to the quiz. Quizzes will be on Wednesdays on the following dates: **1/15, 1/22, 1/29**. Each quiz will become available on Sakai at noon and must be completed by 11:55 pm on the following day. The best two quiz scores of the three will be used in calculating final semester grades. Unfortunately, it will not be possible to make up quizzes that are missed, so please plan accordingly, and please take each quiz in a place where you are unlikely to lose connection with the Internet.

**Optional Weekend Field Trip to the Coast:** If enough members of the class are interested, we are often able to arrange an optional weekend field trip to the UNC marine lab in Morehead City during April. Activities include a collecting trip on a research boat, exploration of intertidal habitats, a visit to the Pine Knoll Shores Aquarium, and a brief tour of the UNC marine lab. More information will be available soon.

**Invertebrate Interns:** We will select 3-4 members of the class who are interested in learning how to establish and maintain saltwater aquaria. The interns will assist the teaching assistants each week in caring for the numerous live invertebrates in the lab and in keeping the aquaria functioning properly.

**E-mail contact:** You are free to send e-mail to your instructors, but please be aware that Dr. Lohmann often receives more than 200 e-mail messages each day and cannot always respond promptly (or at all). A face-to-face conversation remains the most reliable and effective mode of communication and should be used whenever possible. During a typical week, you will have multiple chances to talk with your professor and teaching assistants (for example, after each lecture, during lab, and during office hours). These are the best opportunities to receive your instructors' undivided attention.

**Honor Code:** The University of North Carolina at Chapel Hill has had a student-led honor system for over a century. As in all UNC classes, students are expected to adhere to the Honor Code, and the student-led Honor System is responsible for adjudicating any suspected violations. For more information, please see: <https://studentconduct.unc.edu/sites/studentconduct.unc.edu/files/documents/Instrument.pdf>

**Accommodations:** If you need an accommodation for a physical or learning disability, please contact Accessibility Resources and Services (ARS website: <https://accessibility.unc.edu>; phone: 919-962-8300; email: [accessibility@unc.edu](mailto:accessibility@unc.edu)). Please also notify your instructors by e-mail or in person so that we can help ensure that suitable arrangements are made to meet your needs.