BIOLOGY 475  
BIOLOGY OF MARINE ANIMALS  
Spring Semester 2014

Professor: Dr. Ken Lohmann  
Lectures: 10 – 10:50 a.m. MWF, Genome Sciences Building room 1374

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.

Lab: Lab is required, and meets in Wilson G19. The lab is limited to 2 sections of 15 students (30 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 quickly as possible, so that your classmates on the waiting list can fill any spaces that might become available.

Teaching Assistants:  
Dave Ernst (Office: Wilson Hall 316)  
E-mail address: dernst@live.unc.edu  
Roger Brothers (Office: Wilson 316)  
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Required Text: Biology of the Invertebrates by Jan A. Pechenik, 6th 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:  
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, Nemerteans, Polychaetes, and their ilk  
Weeks 5-7: Marine Molluscs: Seashells, Slugs, and Squid  
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 Monday from 11 to noon in Wilson 241. 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:

3 hourly lecture exams @ 100 points: ..........................................................300
Laboratory assignments, projects, and exams (details will be described in lab)............150
Comprehensive Final Exam: ........................................................................150
Total points..................................................................................................600

Exam Dates:
Hourly Exam I (100 pts): Monday, February 10
Hourly Exam II (100 pts): Wednesday, March 19
Hourly Exam III (100 pts): Friday, April 11
Final Exam (150 pts): Monday, April 28 (at 8:00 a.m.)

NOTE: All lecture exams are cumulative and may contain questions on any material covered previously in the course.

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. Interns can receive one hour of UNC credit on a pass-fail basis.

E-mail contact: You are free to send e-mail to your instructors, but please recognize that Dr. Lohmann sometimes receives more than two hundred e-mail messages in a 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 instructors (for example, after each lecture, during lab, and during office hours); these are the best opportunities to receive your instructors’ undivided attention.