Welcome to Marine Biology... the oceans remain a great frontier for exploration and the home of more animals and plants than occur anywhere else on Earth. Many phyla are endemic to the ocean and many lifestyles have evolved there that could not exist anywhere else. We will explore these different organisms and ecosystems in this course and, hopefully, you will gain a huge new sense of wonder about the living world and leave this class with knowledge and tools to explain the importance of the ocean to our human well being and future.

Much communication about the course will be by email using the email addresses available on canvas. The primary learning goals for the course are for you to be able to:

1) Recognize and/or predict adaptations an organism is likely to need to live in different ocean environments
2) Describe basic features of the ocean and explain how these affect or relate to marine life; be able to distinguish between physical and biological properties that affect the structure and function of marine ecosystems.
3) Use knowledge of the traits of organisms to create or defend theories of phylogenetic relationship
4) Have sufficient knowledge of marine natural history that you could to take friends or family to the Oregon coast or a coral reef and give them a well-informed ‘natural history tour’ that includes information about the biology of the organisms, the functioning of the ecosystem, and the relationship between human activities and the environment.
5) Show considerable knowledge of the characteristics and diagnostic traits of major taxa of marine organisms by being able to determine appropriate questions to ask about unknown specimens to allow for an identification and/or explain what traits a specimen does have that allow you to identify it.
6) Be able to describe the basic properties of major marine ecosystems – open ocean, estuaries, coral reefs, kelp forests, epipelagic, deep sea
7) Be knowledgeable about the important role of the tides in coastal ecology, and the key ecological theories that have resulted from studies of the intertidal.
8) Assimilate and interpret data presented in a variety of formats, especially being able to summarize or make generalizations using well-crafted paragraphs that include quantitative information.
9) Have developed a naturalist’s ‘eye’ – seeing the organism before you, and noticing details, and asking questions that lead to understanding of its biology.
10) Write your own learning objective!!!
TEXTBOOKS
1) REQUIRED - *Marine Biology* – Castro & Huber – referred to as C&H in syllabus – 8th, 9th, 10th editions are all fine. There will be at least four copies on reserve in the library for short-term checkout. Renting or Kindle should be ok, taking summary notes and reading for comprehension often work better than highlighting when it comes to comprehension and retention.

2) REQUIRED – Simutext Modules (details in email, $10 online purchase)

3) Recommended - *Photographic Atlas of Marine Biology* – Wisehart, Rempala, & LeBoffe. This is a great book, lecture material and images will come from this book.

4) Recommended – *Whelks to Whales* – useful in lab, and for the summary information about different taxonomic groups. Field guide to keep!!

5) Additional Readings, if needed to supplement lectures, will be posted on Canvas and announced online and in class if not already on the syllabus.

6) I-Clickers – will be used as term proceeds for enhancement of learning, not attendance.

FIELD TRIPS – ONE REQUIRED
- Sat., Jan. 23 (Oregon Coast Aquarium)

The second field trip involves collecting animals and working in the lab as well as visiting the Center for Marine Life. YOU MUST ATTEND AT LEAST ONE FIELD TRIP – SIGN UP DURING WEEK 2. THEY WILL BE FUN AND WILL LAST ALL DAY.

PROJECT – The personal project can be 1) an annotated bibliography and short report about a marine environmental or conservation problem that includes a teaching module presented to one of the lab sections, 2) a scientific exploration involving reading and summarizing five related papers from the scientific literature and a critical review of two of them, 3) a project of your own design (must be proposed by Week 2 (Jan. 14) and approved by Week 3 (Jan 21)).

PARTICIPATION CREDITS – Each week there will be small assignments that you need to complete in order to participate in discussion that will occur during lecture. These will be either turned in through Canvas or in class and will be worth 2 pts per week. Except for Week 1, they cannot be made up or turned in late. You can, however, skip one week without penalty.

GRADING
- Participation 20 pts.
- Field Trip 5 pts.
- Lab – Notebook 10 pts., Simbio Units 5 pts., Lab Practical 5 pts.
- Personal Project – 20 pts.
- Exams (2 mid-terms & Final) 35 pts. We will use better of the average of the 3, or the Final

The final is comprehensive; there are no makeups for the midterm exams, but you will have access to copies to aid in studying for the final. However, if you take both midterm exams and are happy with the average on them, you do not need to take the final. We will just use that average for the exam grade.
SCHEDULE

Week 1 – Basic Oceanography – Physical and Chemical Properties of the Ocean,
   C&H, Ch. 2 & 3 & 1st half of Ch. 4

Week 2 – Intro to Marine Diversity
   C&H, Ch. 4, remainder, Ch. 7, & Ch. 10 through “Larval Ecology”
   Lab— Life in a Mussel bed – mussels, barnacles and friends

Week 3 – More diversity, field trip prep – C&H 7,8 – Seabird Readings (On Canvas)
   Lab – More Arthropods and Molluscs, Cnidaria
   FIELD TRIP – SAT. JAN. 23 8:00AM-5:30PM

Week 4 - Review, MID-TERM on Wednesday – Jan. 27
   Lab – Barnacle Zone (begin), How to use tide tables

Week 5 – Tides & Intertidal Ecosystems – C&H – Ch. 3, remainder; Ch. 11
   Lab - Barnacle Zone discussion, tide tables worksheet due.
   Begin Keystone Predator

Week 6 – Intertidal Ecosystems & Estuaries (Ch. 11, 12)
   Lab – Echinoderms
   FIELD TRIP – SAT. FEB. 13 7AM-6PM

Week 7 – Water Column – C&H, Ch. 15,16
   Lab – Plankton and Bacteria – C&H, Ch. 5

Week 8 – Marine Mammals – C&H Ch. 9
   Lab – diverse phyla

Week 9 – Marine Birds and Reptiles, 2nd MIDTERM on Wednesday, March 2
   Lab Practical and Lab Notebooks Due

Week 10 – Coral Reefs, Kelp Forests, and Climate Change – C&H 13, 14 & TBA
   Paper discussion & Project presentations in Lab
   5% XC for projects turned in this week during lab

FINAL EXAM – 2:45 PM WED. MARCH 16; PROJECTS DUE