Invertebrate Zoology (BI451/551, 8 credits)  
Tuesdays and Thursdays  
(8:30 am - 5:30 pm, lunch at 12:00 unless noted otherwise)  
Earlier than 8:30 am on many morning field trips

Spring Quarter 2019
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TA: Christina Ellison (cellison@uoregon.edu)

Class Schedule

Week 1
4/2 17:48 PDT 0.71 feet LL
RE  8:30  Introduction to class
MW  9:00  Lecture: Phylum Cnidaria Intro. and Anthozoa
          10:30  Set up scopes
          11:00  Lab: Anthozoa anatomy and diversity
          13:15  Dock walk (Anemones and hydroids)
          14:30  Lab: Anthozoan anatomy and diversity (cont’d)

4/4  07:14 PDT  +1.3 feet HL (sunrise: 6:53)
RE  08:30  Lecture: Class Hydrozoa
       10:00  Lab: Hydrozoan diversity
RE  13:15  Lecture: Classes Scyphozoa, Cubozoa & Staurozoa
       14:30  Docks walk (medusa hunt)
       15:30  Lab: Medusae – Hydrozoans and Scyphozoans

Week 2
4/9  09:49 PDT  -0.04 feet LL
     08:00  Field Trip – S. side of Sunset Bay
RE  11:00  Lecture: Phylum Porifera
       13:15  Lab: Phylum Porifera
MW  15:30  Lecture Phylum Ctenophora
          Out of class: Jellies video

4/11 11.38 PDT  +0.01 feet LL
     8:30  Lab: Ctenophores
       9:45  Field Trip Portside (flatworms, nemerteans)
MW  11:00  Lecture: Phylum Platyhelminthes (Turbellarians)
13:15 Lab: Platyhelminthes Lab (Turbellarians)
MW 16:00 Lecture: Platyhelminthes (Parasitic Classes)

**Turn in Lab Notebooks**

**Week 3**

4/16 16:52 PDT -0.22 feet LL
RE 8:30 Lecture: Nemertea
10:00 Lab: Nemertea
13:15 Lab: Nemertea (continued)
15:30 Field trip to Portside mudflat – II (annelids...)

4/18 06:14 PDT -0.06 feet LL (sunrise 6:30)
MW 8:30 Lecture: Phylum Annelida I – intro
MW 10:00 Lecture: Annelida II
13:15 Lab: Annelida Dissection

**Week 4**

4/23 10:02 PDT -0.63 feet LL
08:30 Field Trip – South Cove, Cape Arago
MW 11:00 Lecture: Annelida III
13:15 Lab: Annelida Diversity
16:00 Review session

(need to get gastropods and bivalves this week because poor tides when we do them)

4/25 11:46 PDT 0.28 feet LL
08:30 Midterm Exam I
RE 11:00 Lecture: “Phylum” Sipunculida
13:15 Laboratory – Sipunculids – peanut worms

**Week 5**

4/30 16:20 PDT +1.26 feet LL
RE 8:30 Lecture: Phylum Mollusca Intro + Class Polyplacophora
10:00 Lab: Chiton Diversity
MW 13:15 Lecture: Class Gastropoda
14:45 Lab: Gastropod Diversity

5/2 17:35 PDT +1.5 feet HL
RE 8:30 Lecture: Mollusca, Class Bivalvia
10:00 Lab: Bivalve Diversity, Behavior and Dissection
MW 13:15 Lecture: Mollusca, Class Cephalopoda
14:45 Lab: Squid Dissection
Week 6
5/7  08:49 PDT  -0.97 feet  LL
  06:30  Field trip to Middle Cove, Cape Arago
RE  10:30  Lecture: Phylum Echinodermata Intro. + Stelleroidea
  13:15  Laboratory: Asteroid
RE  16:00  Lecture: Echinodermata, Classes: Ophiuroidea

5/9  10:24 PDT  -0.86 feet  LL
  08:30  Field trip to North Cove (get Ophiuroidea and Hemichordates)
  11:00  Lab: Ophiuroids
RE  13:15  Lecture: Echinodermata, Classes Echinoidea & Holothuroidea
  14:30  Lab: Echinoidea and Holothuroidea Diversity, Holothurian Dissection

Week 7
5/14  15:26 PDT  +0.37 feet  LL
  08:30  Midterm II or RV Pluteus boat trip if weather is good
RE  11:00  Lecture: Phylum Hemichordata  (if collected last week)
  13:15  Lab: Hemichordate (draw one ☺)
MW  15:00  Lecture: Phylum Arthropoda + Chelicerata

5/16  17:08 PDT  +1.01 feet  HL
  08:30  RV Pluteus boat or Midterm II if weather not good
RE  13:15  Lecture: Arthropoda, Introduction to Crustacea I (Class: Branchiopoda)
  14:30  Lab: Crustacea I, Branchiopoda (Artemia, Cladocera)  (order in advance)
        Lab Notebooks due (II)

Week 8
5/21  08:54 PDT  -1.23 feet  LL (sunrise 5:47)
  06:30  Field trip to Qochyax ("Quay-Kee-awk") Island or Lighthouse
MW  11:00  Lecture: Arthropoda, Crustacea II - Intro. Malacostracans + Decapods
  13:15  Lab: Crab Dissection

5/23  10:20 PDT  -0.39 feet  LL
  8:30  Lab III: Decapod diversity
RE  13:15  Lecture: Arthropoda IV: (Classes Copepoda, Ostracoda, Cirripedia)
  14:45  Lab IV: Cirripedia + crustaceans in plankton
Week 9

5/28  14:31 PDT  +1.54 feet LL
RE  08:30  Lecture: Phylum Chordata, Subphylum Tunicata (=Urochordata)
     10:00  Lab: Ascidian diversity
MW  13:15  Lecture: “Lophophorates” Intro. and Bryozoa
     14:45  Lab: Bryozoa Diversity
     16:00  Review session

5/30  16:03 PDT  +1.99 feet HL
     8:30  Midterm III
MW  13:15  Lecture: Phyla Phoronida and Brachiopoda
     14:30  Lab: Phoronida (1 or 2 species)

Week 10- BioBlitz Projects

6/4  07:50 PDT -1.57 feet LL

6/6  09:21 PDT -1.63 feet  LL
     Lab cleanup
     Notebooks due

Finals Week (Week 11)

6/11  no class, no final
Syllabus for INVERTEBRATE ZOOLOGY (BI 451/551, 8 credits), Spring 2019

COURSE GOALS/LEARNING OUTCOMES

Student will:
1) Learn to use marine invertebrates as models to understand general biological processes
2) Develop an understanding of the unifying features across organisms while appreciating the unique morphological, physiological and ecological diversity of organisms.
3) Learn to evaluate relationships between structure and function by examining how organisms accomplish activities such as locomotion, feeding, growth, respiration, excretion and reproduction.
4) Develop working knowledge of Oregonian and northeastern Pacific marine invertebrates accessible in their local habitats and environments.


You will have access to the lab 24/7. We will be in the lab Tuesdays and Thursdays and likely on other occasions as well. You are welcome to drop by our offices/labs (Richard in Tyler lab and Maya in library beside Clara) if you have questions. If we are unavailable at that time, we can make an appointment to meet you. We will have field trips to local habitats, often starting early in the morning depending on the tides.

Course Requirements and Evaluations:

Your final grade will be determined by a combination of three midterm exams, your laboratory notebook, and participation and report for the barcoding project. Material covered on midterms will include lectures, lab materials, and assigned readings (see above schedule). Attendance is required on all field trips, in all laboratory sessions, for all lectures and for student presentations.

Notebooks – 40% (3 evaluations, Only 1st one can be modified for a re-grade)
Midterms – 50% (3 midterms, 15%, 15% and 20% respectively)
BioBlitz project – 10%

You need to have:

1) textbook (specifics above)
2) A lecture notebook
3) A separate lab notebook – loose leaf notebook with unlined paper in 3-ring binder.
4) Rite-n-Rain notebook for field notes (in office)
5) Dissecting tools – forceps, scissors, scalpel, disposable blades, probe, plastic ruler
6) Memory stick
7) Full raingear and rubber boots
**Lab Notebook**

We will not have a formal lab manual that guides you through each lab but will typically have a lab handout to give some guidance (e.g. helpful diagrams for dissections, recommendations for organisms to look at). You will be drawing a variety of organisms for most taxonomic groups, combined with notes on any exercises we do in lab. You don’t have to draw everything you see in lab but drawing thorough examples of different groups for each phylum is important.

**Your lab notebook should include:**

1. Drawings, descriptions, and notes on observations of animals you examine in lab
2. Accurate labeling of anatomy of live and dissected animals
3. **Classification** for each animal (starting with Phylum and working down to Genus and species- all accurately spelled)
4. Some indication of **size scale** for each drawing (field of view and magnification)
5. Notes on lab exercises
6. Field information for the organisms you describe (e.g. habitat, ecological associations etc.)

Mackenna Hainey’s lab notebook is on display in the back of the lab as an A+ sort of notebook. But note, artistic ability is not graded, just thoroughness!

**The notebook will be graded on:**

1. Number of animals drawn (a representative number for each taxonomic group available in lab)
2. Description of organism/correct anatomical labeling
3. Classification and scale for each specimen drawn
4. Observations (e.g. ecology, habitat collected from, lifecycle, if pertinent)
5. Detailed notes on all fellow student talks

**BioBlitz Project:**

During week 10 we will be participating in and contributing to a BioBlitz project sponsored by the Western Association of Marine Laboratories (WAML) being held at OIMB. During this week we will be working with visiting invertebrate taxonomists and geneticists to thoroughly survey the invertebrates at particular intertidal site(s). This will involve collecting, identifying, and preserving voucher and genetic samples as part of a larger collaborative effort. This will enable you to use the knowledge you have gained over the term to identify species of invertebrates and learn how to preserve voucher and genetic samples. Additionally it will allow us to contribute to a larger project assessing biodiversity in our local habitats.