

BI 451/551 INVERTEBRATE ZOOLOGY SYLLABUS

Summer 2023, Monday-Wednesday-Friday

Instructor: Patrick Baker, pkbaker@ufl.edu

Teaching Assistant: TBA

Required Text: none.

Suggested Texts: not required, all are available at the OIMB library

- general invertebrate zoology (pick one)

- Brusca, R.C., W. Moore, & S.M. Schuster (2016) *Invertebrates*, 3rd Sinauer. 1104 pp. ISBN-10: 1605353752.
- Pechenik, J.A. (2014) *Biology of the Invertebrates*, 8th McGraw Hill. 606 pp. ISBN-10: 0073524182.
- Ruppert, E.E., R.S. Fox, & R.D. Barnes (2003) *Invertebrate Zoology*, 7th Brooks-Cole. 989 pp. ISBN-10: 0030259827.

- laboratory manuals (pick one)

- Nybakken, J.W. (1995) *Diversity of the Invertebrates: A Laboratory Manual. Pacific Coast Version*. McGraw Hill. 328 pp. ISBN-10: 0697151204.
- Wallace, R.L. & W.K. Taylor (2002) *Invertebrate Zoology Lab Manual*, 6th Benjamin Cummings. 356 pp. ISBN-10: 0130429376.

- field guides

- Kozloff, E.N. (1983). *Seashore Life of the Northern Pacific Coast: An Illustrated Guide to Northern California, Oregon, Washington, and British Columbia*. Univ. Washington Press. 378 pp. ISBN-10: 0295960841.
- Lamb, A. & B. Hanby (2005) *Marine Life of the Pacific Northwest: A Photographic Encyclopedia of Invertebrates, Seaweeds And Selected Fishes*. Harbour Publ. 398 pp. ISBN-10: 1550173618

Other Required Materials: There are additional required materials, as follow.

- required notebook supplies

- Drawing materials: (e.g. Strathmore 400 or 500 series, or Blick 60- or 80-weight). Higher numbers indicate heavier, more durable paper. The paper can be loose or spiral-bound but, if it is loose, provide a binder as well. Number 2 HB pencils are acceptable, but you may care for a range of harder and softer pencils. Colored pencils are optional.
- Field notebook: 5x7" (actual dimensions may vary) waterproof field notebook, plus pencil or oil-based ink pens.

- required laboratory and field supplies

- Basic standard dissection kit, including probe, scissors, and scalpel.
- Rubber boots or neoprene shoes for field trips; see below in **Field Trips and Attendance** for more information.

Grading: BI 451 (for BI 551, see Graduate Credit Scoring, below)

The course grade will be broken down as follows.

| | |
|-----------------------|-----|
| Lab Quiz 1 | 4% |
| Field Notebook check | 1% |
| Lab Notebook check | 1% |
| Midterm* | 15% |
| Lab Quiz 2 | 4% |
| Field Trip Attendance | 7% |
| Final Lab Exam | 10% |
| Field Notebook | 8% |
| Lab Notebook | 25% |
| Final Exam | 25% |

*Information from this syllabus may appear in the midterm exam.

Grades are based on the cumulative of the percentages above; there is no curve. The grade cut-off values are as follow:

93% and above = A

90% = A-

88% = B+

83% = B

80% = B-

78% = C+

73% = C

70% = C-

68% = D+

63% = D

60% = D-

Course Schedule: The following schedule is subject to change as required. Field trips will be arranged as the course progresses.

June 21-24: Introduction, Annelids

June 27-July 1: Mollusks - **Lab quiz Friday**

July 6-8: Mollusks, Arthropods - **All notebooks due Friday**

July 11-15: Arthropods - **Midterm Friday**

July 18-22: Echinoderms

July 25-29: Cnidarians - **Lab quiz Friday**

August 1-5: Minor Phyla

August 8-12: Sponges - **Final Lab Exam on Wednesday pm**

All Notebooks Due on Wednesday pm

Final Exam on Friday

Tests: Lab quizzes will focus on specimen identification, anatomy, and habitat. The midterm and final exams will focus on lecture material. The final exam is not comprehensive except for material specifically covered in the midterm exam; any material in the midterm may be used again, possibly re-worded or combined with other questions.

Field Notebooks: Waterproof notebooks will be taken into the field on every trip. Students will note date and time, environmental conditions, and make relevant field observations. The purpose of the field notebook is to develop observational habits, and you will be graded on your effort. Legibility is also important.

Lab Notebooks: Drawing paper will be used to make 1-3 detailed drawings every day we have lab. As with field notebooks, the purpose is to sharpen your observational skills. Use graphite pencils only for the drawing; colored pencils may be used sparingly only *after* the drawing is made to add useful color details. Artistic skill is not needed, but lack of artistic skill is no excuse for careless drawings. You will be graded on effort more than precision. All drawings should be accompanied by the following information:

- Taxonomy: phylum & other useful taxonomic levels, plus genus & species, if known.
- Habitat from which the specimen was collected, if known. If it is from a collection or culture, note that.
- Scale (e.g. life-size, ¼ life size, or magnification). In some instances, a scale bar may be appropriate.
- Specimen preparation. Is it live, anesthetized, or dead? How did you anesthetize or kill it? Is it fresh or preserved? How was it preserved? Is it dissected?
- Specimen orientation. What side are you drawing? Right? Dorsal?
- Label everything you can see. Use lab guides or other texts for information, but do not copy those guides in your drawings.

Field Trips and Attendance: You need rubber boots or neoprene shoes and clothes that can get dirty. Bare feet or open-toed footwear will not be permitted in most field sites. There may be rain and early morning field trips will be chilly. Many sites will involve rugged terrain so, if you have any physical limitations, inform the instructor in advance. There will be one or more trips in a boat and some field sites involve long trips on winding roads, and motion sickness is possible.

Some field trips will begin very early to take advantage of morning tides. Regular attendance and full participation will ensure full credit. Missing more than one field trip without a prior excuse will count against your score, as will lack of full participation in the field. Wet clothes, mud, and slime are not dangerous, and you will be expected to get wet and handle organisms.

Safety: Safety will be discussed for lab and field situations where appropriate. Egregious violations will be reflected in the field grade; repeat violations that endanger yourself or others will result in you being asked to leave the course.

Academic Integrity: Please refer to the University of Oregon website:

<http://uodos.uoregon.edu/StudentConductandCommunityStandards/StudentConductCode/tabid/69/Default.aspx>

Graduate Credit Scoring: For students taking this course for graduate credit, the points outlined above will be prorated to 80% of the total grade, and the remaining 20% will be based upon a special project, which will be discussed in advance with the instructor. This project will involve the following parts: observations, hypothesis, experimental design, project proposal (plan of work), data collection, data analysis & hypothesis testing, and project report. The latter will be written as a scientific manuscript in a standard format with appropriate references. The project proposal, which is due by the third Monday of the course, will not be graded but is required for project approval.

Proposed Daily Schedule – subject to change as needed. **Bold** indicates minus tides (below mean low), **red** indicates field times outside of normal class hours.

Mon. June 20 – NO CLASS

Wed. June 22 – low tide +1.3 at 1:40 pm – meet van at 12:45 pm

Fri. June 24 – low tide +2.5 at 3:26 pm – regular breakfast, van at 7:30 am

Mon. June 27 – low tide **-0.9 at 6:10 am** – field trip to be determined

Wed. June 29 – low tide **-1.1 at 7:23 am - 6:00 am breakfast, van at 6:30 am**

Fri. July 1 – low tide **-1.0 at 8:34 am - 7:00 am breakfast, van at 7:30 am**

Mon. July 4 – NO CLASS

Wed. July 6 – low tide +0.8 at 11:39 am – field trip to be determined

Fri. July 8 – low tide +2.1 at 1:19 pm – field trip to be determined

Mon. July 11 – low tide **-1.4 at 4:56 am** – even I don't get up that early

Wed. July 13 – low tide **-2.5 at 6:37 am - 5:30 breakfast, van at 6:00 am**

Fri. July 15 – low tide **-2.5 at 8:12 pm - 7:00 am breakfast, van at 7:30 am**

Mon. July 18 – low tide **-0.6 at 10:28 am** – meet van at 9:30 am

Wed. July 20 – low tide +1.3 at noon – field trip to be determined

Fri. July 22 – low tide -2.8 at 1:49 pm – field trip to be determined

Mon. July 25 – low tide **-0.3 at 5:09 am** – yeah... no

Wed. July 27 – low tide **-0.8 at 6:28 am** – field trip to be determined

Fri. July 29 – low tide **-1.0 at 7:36 am - 6:30 am breakfast, van at 6:30 am**

Mon. August 1 – low tide **-0.4 at 9:11 am** – meet van at 8:00 am

Wed. August 3 – low tide +0.7 at 10:16 am – field trip to be determined

Fri. August 5 – low tide +2.2 at 11:39 am – field trip to be determined

Mon. August 8 – low tide **-0.6 at 3:41 am** – maybe it could build character

Wed. August 10 – low tide **-1.76 at 5:33 am** – still dark, NOTEBOOKS DUE

Fri. August 12 – low tide – **2.1 at 7:07 am** – **optional field trip**, FINAL EXAM