CONTENT: This course is an introduction to invertebrate animals, which constitute 98% of the animal kingdom. A one-term course allows only for brief coverage of the major invertebrate taxa but still presents students with the great diversity of body plans among invertebrates and the evolution, taxonomy, ecology, and behavior of these animals. The goal, however, is not to generate a “laundry list” of characters, but to identify the variety of solutions that have evolved in response to biological challenges common to all animals. The laboratory portion is designed to provide students with the opportunity to observe living and preserved specimens and to introduce them to the natural history of invertebrate animals of the Pacific Northwest. The course will also include many field trips to examine and collect invertebrates in their natural habitat. Weekly discussions of current literature in the field of invertebrate zoology and independent research projects will also be included.

GOALS: Upon completion of this course, students will…
1. know the major taxa of invertebrates and their phylogenetic relationships to each other
2. understand the morphology and physiology of the major invertebrate taxa
3. know techniques for the collection, manipulation, and dissection of invertebrate animals
4. be able to identify several species of invertebrates from the Pacific Northwest
5. have gained skills in macrophotography and biological illustration

MATERIALS:
• Basic dissecting kit
• Lab notebook with unlined white paper
• Rubber boots/hip waders
• Rain gear
• Colored pencils will be useful
• Digital camera (recommended)

GRADING: Grades will be determined by several factors, including lecture tests, projects, laboratory practicals, laboratory notebook preparation, and class/lab participation. The relative point value of each assignment is as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Point Value</th>
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<tbody>
<tr>
<td>Lecture tests</td>
<td>50%</td>
</tr>
<tr>
<td>Research Projects</td>
<td>20%</td>
</tr>
<tr>
<td>Laboratory Portfolio</td>
<td>20%</td>
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<tr>
<td>Theta*</td>
<td>10%</td>
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</table>
*This is basically a participation grade. Points may be deducted for the following: disrupting class, sleeping in class, non-participating in class discussion, or not attending field trips.

While bonus questions may be given with each test, there is no provision for extra credit assignments. Your grade will be determined solely by the factors listed above; therefore you need to make the most of every opportunity to earn points. Grading scale is as follows:

\[
\begin{align*}
90 - 100\% &= A & 72 - 77\% &= C \\
88 - 89\% &= B+ & 70 - 71\% &= C- \\
82 - 87\% &= B & 68 - 69\% &= D+ \\
80 - 81\% &= B- & 60 - 67\% &= D \\
78 - 79\% &= C+ & <60\% &= F
\end{align*}
\]
<table>
<thead>
<tr>
<th>Week of:</th>
<th><strong>Monday</strong></th>
<th><strong>Wednesday</strong></th>
<th><strong>Friday</strong></th>
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</thead>
<tbody>
<tr>
<td>22 Jun 15</td>
<td>M: Intro, Cladistics, Lab Setup</td>
<td>M: Porifera</td>
<td>M: Cnidaria</td>
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<tr>
<td></td>
<td>A: Porifera</td>
<td>A: Cnidaria</td>
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<td>29 Jun 15</td>
<td>M: Ctenophora</td>
<td>M: Test 1, Intro to Protostomes</td>
<td>M: Sipuncula</td>
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<td>A: Platyhelminthes, Q&amp;A session</td>
<td>A: Nemertea</td>
<td>A: Annelida</td>
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<td>6 Jul 15</td>
<td>M: Annelida</td>
<td>M: Mollusca</td>
<td>F: Mollusca</td>
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<td>A: Annelida</td>
<td>A: Mollusca</td>
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<td>M: Test 2, Lophophorata</td>
<td>M: Intro to Ecdysozoa, Arthropoda</td>
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<td>A: Arthropoda</td>
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<td>20 Jul 15</td>
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<td>A: Echinodermata</td>
<td>A: Echinodermata, Hemichordata</td>
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<td>A: Chordata, Q&amp;A session</td>
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<tr>
<td>10 Aug 15</td>
<td>M: Test 4, Research wrap up</td>
<td>M: Research presentations</td>
<td>M: Research presentations</td>
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<tr>
<td></td>
<td>A: Research wrap up</td>
<td></td>
<td>A: Lab clean up</td>
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