**BIOL F305 Invertebrate Zoology**

Submit originals and one copy and electronic copy to Governance/Faculty Senate Office. See [http://www.uaf.edu/uafgov/faculty/cd](http://www.uaf.edu/uafgov/faculty/cd) for a complete description of the rules governing curriculum & course changes.

### CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL

<table>
<thead>
<tr>
<th>SUBMITTED BY:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Biology &amp; Wildlife</td>
</tr>
<tr>
<td>Prepared by</td>
<td>Derek Sikes</td>
</tr>
<tr>
<td>Email Contact</td>
<td><a href="mailto:ffdss@uaf.edu">ffdss@uaf.edu</a></td>
</tr>
</tbody>
</table>

1. **COURSE IDENTIFICATION:**

<table>
<thead>
<tr>
<th>Dept</th>
<th>Course #</th>
<th>No. of Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL</td>
<td>F305</td>
<td>5</td>
</tr>
</tbody>
</table>

**COURSE TITLE**

Invertebrate Zoology

2. **ACTION DESIRED:**

- [X] Change Course
- [ ] Drop Course

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TITLE</th>
<th>DESCRIPTION</th>
<th>FREQUENCY OF OFFERING</th>
<th>COURSE CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

- [ ] CROSS-LISTED
  - Dept.
  - (Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

- [ ] STACKED (400/600)
  - Dept.
  - Course #
  - currently 3+6 (5 credits) and wish to change to 3+3 (4 credits); offering freq. change from Fall Odd-numbered years to Spring Even-numbered years.

3. **COURSE FORMAT**

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [X] 6 weeks to Full semester

**COURSE FORMAT:**

(check one)

- [ ] OTHER FORMAT
  - (specify)
  - Mode of delivery
  - (specify lecture, field trips, labs, etc)

4. **COURSE CLASSIFICATIONS:** (Undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

- [ ] H = Humanities
- [ ] N = Natural Science
- [X] S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core?

- [ ] YES
- [X] NO

IF YES, check which core requirements it could be used to fulfill:

- [ ] O = Oral Intensive, Format 6
- [ ] W = Writing Intensive, Format 7
- [ ] Natural Science, Format 8

**Received**

JAN 30 2009

Dean's Office
College of Natural Science & Mathematics
Invertebrate Zoology
Spring 2010
Biol 305

Instructor: Derek S. Sikes
Museum
474-6278
dsikes@alaska.edu

TA: Sue Hazlett
147A O'Neill
374-1310
shazlett@hotmail.com

Website: https://classes.uaf.edu/webapps/login (Blackboard)
Office Hours: Wednesdays 12-1, Museum
(or by appt.)
TBA
(or by appt.)

Lectures in Bunnell 408, Tuesday & Thursday 11:30-1 pm

Lab: in Bunnell 409, Monday, 2:15-5:15 pm

Note: This is a 4 credit course. This translates to 3 hours of lecture per week and 4 hours of lab per week. For each hour of lecture students are expected to spend 2 additional hours preparing outside of class. This is a total of 6 hours in class or lab plus 6 hours preparation per week.


ISBN 0-13-042937-6

Supplementary (recommended): The shape of life [videorecording] : the complete
In Rasmuson Library Video Collection

Supplies: Used dissecting kits will be provided. If you'd like a new kit of your own they can be purchased at the bookstore.

Course description: Classification, structure, function, evolution, and life histories of invertebrate animals. Special emphasis will be given to evolution and phylogeny of the invertebrates including coverage of both traditional taxonomic and modern phylogenetic methods.

Course prerequisites: BIOL F105X, F106X, and 271 or by permission of instructor
Note: Offered Alternate Spring.

Goals of the Course: This course will serve as an introduction to Invertebrate Zoology and provide a solid background for students who wish to pursue in-depth any field that includes animals as study organisms, including but not limited to, marine biology, parasitology, entomology, and wildlife biology. It will introduce students to the exciting
field of Invertebrate Zoology and encourage life-long learning and appreciation of invertebrates. This course is an excellent companion course to BIO 328 ‘Biology of Marine Organisms’ but differs in covering all invertebrate groups (non-marine / parasites) and in having a more evolutionary and less ecological structure.

**Specific Objectives:** Students will:
1. Learn all the major groups of invertebrates and their characteristics.
2. Be able to identify the major phyla and most classes of invertebrates.
3. Recognize and be able to describe the function of the body parts of different invertebrates
4. Explain the ecological importance of invertebrates in different habitats
5. Explain the importance of invertebrates to human affairs.
6. Be able to explain how biologists classify organisms and infer their evolutionary histories and relationships

**Course instruction** will consist of lectures twice a week, a once weekly lab, textbook and lab readings, and classroom discussion. Lecture notes will be available from the Blackboard website but I recommend writing your own notes with your own illustrations whenever possible. Use of a 3-ring binder will allow you to organize notes, exams, handouts, readings etc.

**Course policies:** Material presented in all lectures and labs scheduled during normal class periods is fair game on any quiz or exam. Participation in lecture and lab discussions will count towards your final grade (see below). Lectures and lab will begin immediately upon the hour of scheduled meeting times. Plagiarism and other forms of cheating will result in an automatic "F" in the class. The student's advisor will be notified of this grade assignment and the student will not be allowed to drop the course.

**Course webpage:** Access the course webpage via Blackboard at [https://classes.uaf.edu/webapps/login](https://classes.uaf.edu/webapps/login) Double-check that your current & used email is listed or you risk missing important announcements. The syllabus, supplemental reading, lecture notes, etc. are available at this website. If your computer is not working or does not exist, use the IAB computer resource lab in 303 Irving I, computers in the library, or other UAF computer labs.

**Communication:** The best way to reach me outside of class is via email. However, do not use email to ask questions about course content that you could ask in class, or during office hours. Email is for quick communications about scheduling or other brief items only.

*Please turn off or silence cell phones during class and lab.*

----------Laboratory----------

**Laboratory Work:** You are required to attend the laboratory portion of this course. Laboratory work is designed to give you a hands-on learning opportunity into the world of invertebrates. Frequently this will involve dissection, familiarization with form and structure, and slide viewing. Open lab hours will be posted in lab. Students are encouraged to view material before exams.
The laboratory section of this course will focus on the traits used to recognize different groups of invertebrates and their functions.

Laboratory instruction will include small group work, hands-on activities, and analysis of anatomical features. A firm grasp of taxonomic and systematic nomenclature will be critical to success in this course.

**Be Advised:** Indifferent or malicious treatment of museum and teaching specimens will not be tolerated. Some specimens will be displayed for visual inspection only and will be marked "Do not touch." In addition, a variety of chemicals have been used in lab as preservatives, therefore *no food or drink will be allowed in the lab.*

-----------------Other------------------

**Disabilities Services:** The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services (203 Whit., 474-7043) to provide reasonable accommodation to students with disabilities.

**Missed lecture / lab policy:** Frequent absences from lab or lecture will reduce participation grade. Exams and lab practicals can only be missed if (A) you suffer from a physician-certified illness (need to show me a note from your physician), or (B) are traveling on University or Military business, or (C) have another serious, documentable calamity. Notify me ahead of time if possible if you are going to miss an exam, and be prepared to document the calamity. If a midterm is missed (with a note) the percentage weight of the missed exam will be added to the percentage weight allotted to the Final Exam; *no makeup midterm examinations will be given.*

----------------- Additional course information -----------------

This class requires extensive memorization of taxonomic nomenclature, and anatomical features, (in addition to lecture and reading material). This can seem daunting, but it is nonetheless necessary to gain an appreciation and understanding of invertebrate diversity and evolution.

**Extracurricular opportunities:** You are encouraged to consider volunteer work in the Entomology department of the University of Alaska Museum (during or after the course ends). Your training in class can provide you an excellent start on assisting with various research goals of the Museum. There is an extensive Marine Invertebrate research collection in the Museum.
**Laboratory Quizzes:** Each Monday lab session will begin on time with a short quiz that will be graded. If you are late or miss a lab you will not be able to make up the quiz and will receive 0 points for that quiz, however, your lowest quiz grade will automatically be dropped so your quiz grade will be the best 10 of 11 quizzes.

**Laboratory Practicals:** Questions will be asked based on specimens, including sight identification to appropriate taxonomic rank (eg Phylum, Class, Subclass, etc).

**Participation Grade:** A significant portion of your grade is based on participation. This will entail attending all labs and participating by asking questions in lecture and lab.

**Readings:** Complete readings before class. Chapters in the text are intended to augment lecture material but will not be specifically discussed in class (with a few possible exceptions). Supplemental readings from the primary literature will be made available, some of which will be discussed in lab and form material for exam questions.

**Lecture exams:** Based on class notes and readings. Cumulative but focused primarily on material not previously tested. Composed of definitions, short & long (essay) answer questions, with some true / false or multiple choice. One or more bonus questions will be available.

**Dennis Questions:** These are hypothetical but thought-provoking questions written by an imaginary boy named Dennis. Each question is really a series of related questions each of which you should number and answer in turn outside of class using any resources available. Work alone and turn in your written answer at the specified due date.

---

**Evaluation:** The course grade will be based on the following:

The LECTURE grade will be calculated as follows:
Midterm Lecture Exam 200 pts
Final Lecture Exam 250 pts
Dennis Questions (lowest dropped) 120 pts
Participation 30 pts

Total Lecture 600 pts

The LAB grade will be calculated as follows:

Quizzes (best 6 out of 8) 60 pts
Midterm Laboratory Practical I 100 pts
Midterm Laboratory Practical II 100 pts
Final Laboratory Practical 120 pts
Participation (& Discussion group) 20 pts

Total Lab 400 pts

Combined Course total grade translation

A +  97-100 %
A    93-96 %
A -  89-92 %
B +  85-88 %
B    81-84 %
B -  77-80 %
C +  73-76 %
C    69-72 %
C -  65-68 %
D +  61-64 %
D    57-60 %
D -  53-56 %
F    < 53%
# LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
<th>READINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 24</td>
<td>1. Introduction; Why study Invertebrates?</td>
<td>Ch 1 &amp; 2</td>
</tr>
<tr>
<td>29</td>
<td>2. Protozoa I</td>
<td>Ch 3</td>
</tr>
<tr>
<td>31</td>
<td>3. Protozoa II</td>
<td>Ch 3</td>
</tr>
<tr>
<td>Feb 5</td>
<td>4. Nomenclature</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5. Porifera</td>
<td>Ch 4</td>
</tr>
<tr>
<td>*DQ1 12</td>
<td>6. Cnidaria I</td>
<td>Ch 5 &amp; 6</td>
</tr>
<tr>
<td>14</td>
<td>7. Cnidaria II</td>
<td>Ch 6</td>
</tr>
<tr>
<td>19</td>
<td>8. Platyhelminthes I</td>
<td>Ch 8</td>
</tr>
<tr>
<td>21</td>
<td>9. Platyhelminthes II</td>
<td>Ch 8</td>
</tr>
<tr>
<td>26</td>
<td>10. Nemertea, Mollusca I</td>
<td>Ch 11&amp; 12</td>
</tr>
<tr>
<td>*DQ2 28</td>
<td>11. Mollusca II</td>
<td>Ch 12</td>
</tr>
<tr>
<td>Mar 4</td>
<td>12. Mollusca III</td>
<td>Ch 12</td>
</tr>
<tr>
<td>6</td>
<td>13. Midterm Lecture Exam</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>SPRING BREAK</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>SPRING BREAK</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>14. Annelida I</td>
<td>Ch 13</td>
</tr>
<tr>
<td>*DQ3 20</td>
<td>15. Annelida II</td>
<td>Ch 13</td>
</tr>
<tr>
<td>27</td>
<td>17. Arthropoda I (Panarthropoda, Trilobites)</td>
<td>Ch 15 &amp; 14</td>
</tr>
<tr>
<td>Apr 1</td>
<td>18. Arthropoda II (Chelicerates)</td>
<td>Ch 14</td>
</tr>
<tr>
<td>3</td>
<td>19. Arthropoda III (Myriapoda)</td>
<td>Ch 14</td>
</tr>
<tr>
<td>*DQ4 8</td>
<td>20. Arthropoda IV (Crustacea)</td>
<td>Ch 14</td>
</tr>
<tr>
<td>10</td>
<td>21. Arthropoda V (Hexapoda)</td>
<td>Ch 14</td>
</tr>
<tr>
<td>15</td>
<td>22. Lophophorates, Hemichordates, Chordates</td>
<td>Ch 19, 21 &amp; 22</td>
</tr>
<tr>
<td>17</td>
<td>23. Echinodermata I</td>
<td>Ch 20</td>
</tr>
<tr>
<td>*DQ5 22</td>
<td>24. Echinodermata II</td>
<td>Ch 20</td>
</tr>
<tr>
<td>24</td>
<td>25. ‘Life in the Undergrowth’ DVD &amp; worksheet; equal to a Dennis Q</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>26. Invertebrate Reproduction</td>
<td>Ch 23</td>
</tr>
<tr>
<td>May 1</td>
<td>27. Evolution - misconceptions</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Final Lecture Exam SATURDAY, 10:15 am -12:15 pm</td>
<td></td>
</tr>
</tbody>
</table>

*DQ# = Dates on which “Dennis Question” responses are due

---

# LAB SCHEDULE (tentative!)
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 28</td>
<td>1. Protozoa I (live cultures)</td>
</tr>
<tr>
<td>Feb 4</td>
<td>2. Protozoa II (prepared slides) (quiz on lab 1)</td>
</tr>
<tr>
<td></td>
<td>3. Porifera &amp; Cnidaria (quiz on lab 2)</td>
</tr>
<tr>
<td></td>
<td>4. Platyhelminthes (quiz on lab 3)</td>
</tr>
<tr>
<td></td>
<td><strong>Midterm Laboratory Practical I</strong></td>
</tr>
<tr>
<td>Mar 3</td>
<td>5. Mollusca I</td>
</tr>
<tr>
<td></td>
<td>10. <strong>SPRING BREAK</strong></td>
</tr>
<tr>
<td></td>
<td>17. Mollusca II (quiz on lab 5)</td>
</tr>
<tr>
<td></td>
<td>24. Annelida (quiz on lab 6)</td>
</tr>
<tr>
<td></td>
<td><strong>Midterm Laboratory Practical II</strong></td>
</tr>
<tr>
<td>Apr 7</td>
<td>8. Nematoda</td>
</tr>
<tr>
<td></td>
<td>14. Arthropoda I (quiz on lab 8)</td>
</tr>
<tr>
<td></td>
<td>21. Arthropoda II (quiz on lab 9)</td>
</tr>
<tr>
<td></td>
<td>28. Echinodermata (quiz on lab 10)</td>
</tr>
<tr>
<td>May 5</td>
<td><strong>Final Laboratory Practical [moved to May 1 for 2008]</strong></td>
</tr>
</tbody>
</table>
Subject: Major Course Change, BIO 305
From: Derek Sikes <ffdss@uaf.edu>
Date: Wed, 14 Jan 2009 14:12:34 -0900
To: Carol Piser <fnicap1@uaf.edu>

Carol,

I've attached the syllabus and Format 2 to enact a major course change for BIO 305 (Invertebrate Zoology). I want to change it from 5 credits to 4 and correct the offering information in the catalog (from Fall Odd-numbered years to Spring Even-numbered years).

Can you print these & start them on their signature train?

Thanks,

Derek

Derek S. Sikes, Curator of Insects
Assistant Professor of Entomology
University of Alaska Museum
907 Yukon Drive
Fairbanks, AK 99775-6960
dsikes@alaska.edu
http://users.iab.uaf.edu/~derek.sikes/sikes_lab.htm

phone: 907-474-6278
FAX: 907-474-5469

"Remember that Truth alone is the matter you are in Search after; and if you have been mistaken, let no Vanity reduce you to persist in your mistake." Henry Baker, London, 1785

University of Alaska Museum of the North -
http://www.uaf.edu/museum/

Biol 305 syllabus 2010.doc
Content-Type: application/octet-stream
Content-Encoding: base64

Format2_07a.rtf
Content-Type: text/rtf
Content-Encoding: quoted-printable

Part 1.4
Content-Type: text/plain
Content-Encoding: 7bit