

Biology 242

Animal Architecture and Physiology with Laboratory-Fall 2006

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Course Objectives:

1. Survey of the form and function of the invertebrate animals and protests with emphasis on classification, life histories, ecological adaptations, and medical importance. Describe *connections* between invertebrate phyla based on their development, evolutionary adaptations, and comparative anatomy.
2. Review of basic vertebrate biology and classification (lab) and physiology (lecture).
3. Develop scientific writing and research skills 5. Laboratory includes:
 - a. a review of classification and further study of animal architecture through dissection
 - b. the examination of demonstration material illustrating representative organisms from each phylum and including information about the classification, ecology, and life history of each.
 - c. continued emphasis on the study of biology through investigative means; including three major research investigations and several other smaller investigations addressing the physiology or behavior of various invertebrate groups.

Tentative Lecture Schedule:

<u>Week</u>	<u>Date</u>	<u>Topic(s)</u>	<u>Readings (13th ed.)</u>
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Review of Invertebrate Diversity

1.	8/30-9/1	Intro to course, Protista	Ch. 11
2.	9/4-9/8	Protista, Porifera	Ch. 11, 12
3.	9/11-9/15	Porifera / Cnidaria/ Introduction to Development	Ch. 12, 13, 8
4.	9/18-9/22	Architecture Platyhelminthes	Ch. 9, 14

EXAM 1 9/19, PIERCE 101, 8 AM, COVERS THROUGH DEVELOPMENT

5.	9/25-9/29	Pseudocoelomates	Ch. 15
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Final Report, Stentor Investigation: Due on or before 10/2 at beginning of class

6.	10/2-10/6	Mollusca	Ch. 16
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Fall Break! October 9-10

7.	10/11-10/13	Annelida	Ch. 17
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EXAM 2, 10/12, PIERCE 101, 8 AM, COVERS THROUGH MOLLUSCA

8.	10/16-10/20	Echinoderms, Prechordates Introduction to Chordata	Ch. 22, 23
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Review of Vertebrate Physiology

IN PHYSIOLOGY READINGS, REVIEW AND EMPHASIZE VERTEBRATE MATERIAL ONLY

9.	10/23-10/27	Tissues, Skin, Bones	P. 186-191, Ch. 29
10.	10/30-11/3	Bones, Muscles	Ch. 29

11/1, Report, Regeneration Investigation, due at beginning of class

11.	11/6-11/10	Circulation	Ch. 31
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EXAM 3 11/9, PIERCE 101, 8 AM, COVERS THROUGH MUSCLES

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| 12. | 11/13-11/17 | Gas Exchange, Introduction to Immunity | Ch. 31, 35 |
| 13. | 11/20 - 11/24 | Digestion | Ch. 32 |

November 23-24, Thanksgiving Break

14. 11/27 – 12/1 Excretion/Reproduction

11/28 Poster Day! Poster presentations summarizing Daphnia investigation

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| 15. | 12/4-12/8 | Neural Control | Ch. 33 |
| 16. | 12/11 | Chemical Control | Ch. 34 |

Note: I reserve the right to modify this syllabus and course information if I deem it necessary.

Course Information:

- I. Text: Integrated principles of zoology, by Hickman, Roberts, Larson, et al.**
The newest edition is the 13th; you may be able to get by with an earlier edition if one is available. See me if you have questions.

- II. Laboratory: A. General Zoology Laboratory Guide, by Charles F. Lytle. Current edition is the 14th.**

B. Dissection Kit (required)

- C. Additional Materials--** You may want to buy (share with a friend) a copy of the Rust book for Biology Labs if you didn't last semester, as well as the "writing about biology" handbook. Both will be very useful.

D. Lab Format: Lab will include:

1. Demonstrations of representative specimens of major animal groups
2. Observations and dissections of selected specimens, including frog and fetal pig
3. Investigative activities which may require oral presentations and/or written reports.

III. Additional Course Information

- This class fulfills the sophomore writing requirement. To receive sophomore writing credit for this class you must earn a C- or better. There will be writing assignments chiefly in the form of lab reports. Other writing assignments will be given that may or may not be graded but that you will receive additional credit for as well.
- This class has a web site which you will find useful. It is the old 142 web site that I will gradually modify this semester to fit this course. Some information will not be relevant, but many of the web sites, photomicrographs, and study hints will be very useful. Here is the web site:

<http://www.oxford.emory.edu/OXFORD/RESTRICTED/UNIVERSITY/Classes/Baker/142web/Webpages/142index.html>

- This class has a learnlink conference in which you may post questions or discuss with the instructor or other class members. Look here for class news and study hints. I will check it regularly, and I will encourage you to do the same.
- In Biology 142, you are responsible for all lecture material AND some material covered in your text readings. Pay particular attention to assigned reading topics and to broad topics not covered in lecture. We will discuss as a class expectations regarding learning material in textbook that are not covered in the lecture.
- I use the (+/-) scale for grading.

Tentative point totals for grading are as follows:

Exams 3 @ 100	300
Lab Exams 4@50	200
Lab Write-ups and Additional Writing	75
(two formal lab reports and one poster @25 each)	
Final Exam	175

Total	750
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- Your attendance will definitely influence your grade. Roll will be taken frequently, and frequent absences will lower your course grade, particularly in students with borderline averages. Conversely, excellent attendance will likely improve your grade. Please read the departmental attendance policy and see me if you have questions.
- Tardiness is exceptionally rude and a history of regular tardiness will also have a negative impact on your grade.
- Cell phones must be turned off during lecture and lab time. Camera phones

and cameras of any sort are not to be used during lecture exams or at any time in the laboratory.

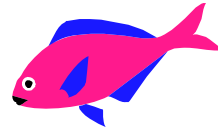
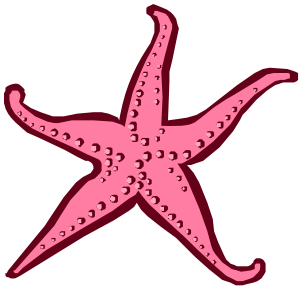
- Exams generally are not made up, unless you have a family emergency or severe illness. If you must miss the exam, you need to let me know ASAP. Exams are typically not rescheduled due to class conflicts or “rough weeks”-- it is part of your job to plan ahead for such contingencies.

IV. Honor Code:

I adhere strictly to the Honor Code and will advise you as the course proceeds regarding rules for citation, group work, etc.

V. Miscellaneous/Office Hours

I am generally in or around the office from 8:30—9:30 MWF, 9-11 Tu Th, or you can make an appointment at other times. You will find that I am on campus from about 8:30-5:00 every day unless I am in the field or have family commitments. I welcome the chance to talk to you, whether it involves class work or is just to visit!



Biology 242
Laboratory - Fall 2005

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
8/31	Field Trip! “The Body Human”	
9/7	Protista and Porifera Dissection: <i>Grantia</i> Investigation #1--Stentor	Lytle, 5-6
9/14	Cnidaria Dissection: <i>Metridium</i> , <i>Aurelia</i> , <i>Gonionemus</i>	Lytle, 7
9/21	Platyhelminthes	Lytle 9
9/28	LAB EXAM 1, PIERCE 119, 8 AM, THROUGH PLATYHELMINTHES	
9/28	Pseudocoelomates Dissection: <i>Ascaris</i>	Lytle 10
10/5	Mollusca Dissection: <i>Venus</i> , <i>Loligo</i> Investigation #2, Regeneration	Lytle, 11
10/12	Annelida Dissection: <i>Lumbricus</i>	Lytle, 12
10/19	LAB EXAM 2, PIERCE 119, 8 AM, THROUGH ANNELIDA	
10/19	Arthropoda Dissection: <i>Procambarus</i> <i>or Callinectes</i>	Lytle, 13
10/26	Echinoderms, <i>Amphioxus</i> , Demos: Echinoderms, prechordates, primitive fishes	Lytle, 14, 15
11/2	Investigation #3—Cardiac Physiology Open lab for work or review	
11/9	Vertebrate Tissues Dogfish, <i>Rana</i>	Lytle, 16, 18, 2

(bones, skin frog)
Demos: Teleost fishes, amphibians

11/16 LAB EXAM 3, PIERCE 119, 8 AM, THROUGH RANA BONES

11/16 *Rana* (musculature, cow heart) Lytle, 18; 319-320.
Demos: reptiles, birds
Begin internal if desired

Thanksgiving Holiday

11/30 Mammal demos
Rana internal

12/7 *Sus* Lytle 19

12/12 LAB EXAM 4, PIERCE 119, 8 AM, THROUGH *SUS*

