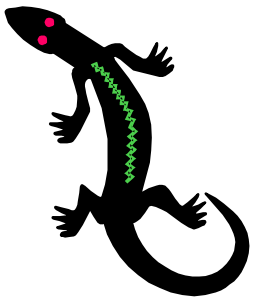


Biology 242

Animal Architecture and Physiology with Laboratory-Fall 2005

Steve Baker
Office: Pierce 117
Phone: 784-8446

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:

Week	Date	Topic(s)	Readings (13th ed.)
Review of Invertebrate Diversity			
1.	8/31-9/2	Intro to course, Protista	Ch. 11
2.	9/5-9/9	Protista, Porifera	Ch. 11, 12
3.	9/12-9/16	Porifera / Cnidaria/ Introduction to Development	Ch. 12, 13, 8
4.	9/19-9/23	Architecture Platyhelminthes	Ch. 9, 14

EXAM 1 9/20, PIERCE 101, 8 AM, COVERS THROUGH ARCHITECTURE

9/23, Draft writeup for first investigation due at start of class

5.	9/26-9/30	Pseudocoelomates	Ch. 15

9/30, Final report, Bear Creek investigation

6.	10/3-10/7	Mollusca	Ch. 16

Fall Break! October 10-11

7.	10/12-10/14	Annelida	Ch. 17

10/14, Final Report, *Stentor* investigation

8.	10/17-10/21	Echinoderms, Prechordates Introduction to Chordata	Ch. 22, 23

EXAM 2, 10/20, PIERCE 101, 8 AM, COVERS THROUGH MOLLUSCA

Review of Vertebrate Physiology

- ***IN PHYSIOLOGY READINGS, REVIEW AND EMPHASIZE VERTEBRATE MATERIAL ONLY***

9.	10/24-10/28	Tissues, Skin, Bones	P. 186-191, Ch. 29
10.	10/31-11/4	Bones, Muscles	Ch. 29

11/4, Third investigation writeup (flatworm)

11.	11/7-11/11	Circulation	Ch. 31

EXAM 3 11/10, PIERCE 101, 8 AM, COVERS THROUGH MUSCLES

12.	11/14-11/18	Gas Exchange, Introduction to Immunity	Ch. 31, 35
13.	11/21 - 11/23	Digestion	Ch. 32

November 24-25, Thanksgiving Break

14.	11/28 – 12/2	Excretion/Reproduction	

11/29 Poster Day! Poster presentations summarizing Daphnia investigation

15.	12/5-12/9	Neural Control	Ch. 33
16.	12/6	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

  Your text and lab also have websites that you may find useful. They are:

  http://highered.mcgraw-hill.com/sites/0072439408/information_center_view0/ (text)

  http://highered.mcgraw-hill.com/sites/007234900x/ (lab)

- 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	100
(three formal lab reports and one poster @25 each)	
Review essays about 5 at 10	50
Final Exam	175
Total	825

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

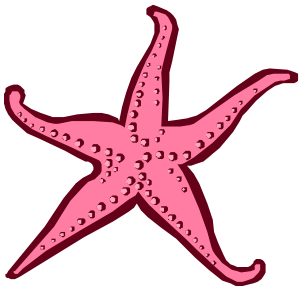
- Exams generally are not made up, unless you have a family emergency or severe illness. If you must miss the exam, you need to let me know ASAP. Exams are typically not rescheduled due to class conflicts or "rough weeks"-- it is part of your job to plan ahead for such contingencies.

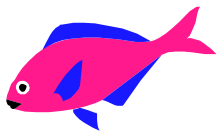
IV. Honor Code:

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

Date	**Topic**	**Reading**
9/1	No lab	
9/8	Field application of identification—Bear Creek **Investigation #1**	
9/15	Protista and Porifera Dissection: *Grantia*	Lytle, 5-6
9/22	Cnidaria Dissection: *Metridium, Aurelia, Gonionemus* **Investigation #2**	Lytle, 7
9/29	Platyhelminthes	Lytle 9
10/6	**LAB EXAM 1, PIERCE 119, 8 AM, THROUGH PLATYHELMINTHES**	
10/6	Pseudocoelomates Dissection: *Ascaris*	Lytle 10
10/13	Mollusca Dissection: *Venus, Loligo* **Investigation #3**	Lytle, 11
10/20	Annelida Dissection: *Lumbricus*	Lytle, 12
10/27	**LAB EXAM 2, PIERCE 119, 8 AM, THROUGH ANNELIDA**	
10/27	Arthropoda Dissection: *Procambarus*	Lytle, 13
11/3	Echinoderms, *Amphioxus*, Demos: Echinoderms, prechordates, primitive fishes **Investigation #4--Regeneration**	Lytle, 14, 15
11/10	Vertebrate Tissues Dogfish, *Rana*	Lytle, 16, 18, 2

	(bones, skin frog) Demos: Teleost fishes, amphibians	
11/17	**LAB EXAM 3, PIERCE 119, 8 AM, THROUGH RANA BONES**	
11/17	*Rana* (musculature, cow heart) Demos: reptiles, birds Begin internal if desired	Lytle, 18; 319-320.
12/1	**OPEN LAB,** mammal demos Rana internal	
12/8	*Sus*	Lytle 19
12/13	**LAB EXAM 4, PIERCE 119, 8 AM, THROUGH *SUS***