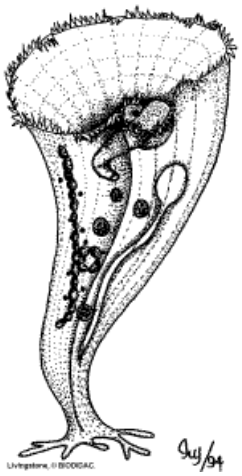
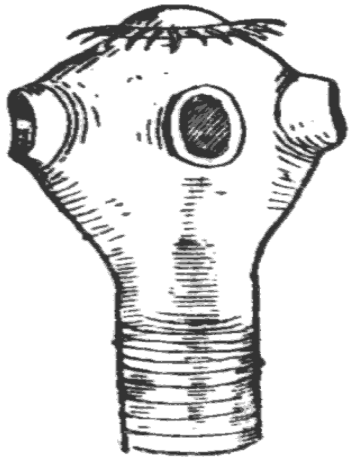


Biology 242Q

Animal Architecture and Physiology
Spring 2013

Steve Baker
Office: Pierce 117
Phone: 784-8446



Course Objectives:

1. Survey of the form and function of the invertebrate animals and protists with emphasis on classification, life histories, ecological adaptations, and medical importance. Discover *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. Analyze experimental data and continue to practice scientific writing skills learned in earlier biology courses. This course is approved as a writing- rich course and INQ course.

Laboratory includes:

a. investigation of animal architecture through dissection and observation

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. completion of three major inquiry-based research investigations and several other smaller investigations examining the physiology or behavior of various invertebrate groups.

Tentative Lecture Schedule:

Week	Date	Topic(s)	Readings (15th ed.)
Review of Invertebrate Diversity			
1.	1/15-1/18	Intro to course, Unicellular Eukaryotes	Ch. 11
2.	1/21-1/25	Uni-Eukaryotes, Porifera	Ch. 11, 12 (sponges only)
3.	1/28-2/1	Cnidaria/ Introduction to Development	Ch. 13, 8
4.	2/5-2/8	Architecture Platyhelminthes	Ch. 9, 14
EXAM 1	**2/5,**	**PIERCE 101, 8 AM, COVERS THROUGH DEVELOPMENT**	
5.	2/12-2/15	Pseudocoelomates	Ch. 15 (Rotifera, Acanthocephala) Ch. 18
6.	2/19-2/22	Mollusca	Ch. 16
Draft, Stentor Investigation: Due on or before 2/18 at beginning of class			
7.	2/26-3/1	Annelida Echinoderms	Ch. 17, 22
Final Report, Stentor Investigation, Due on or before 3/4			
EXAM 2, 2/28, PIERCE 101, 8 AM, COVERS THROUGH MOLLUSCA			
8.	3/4-3/8	Echinoderms, Prechordates Introduction to Chordata	Ch. 22, 23
		Spring Break! March 11-15	
Review of Vertebrate Physiology			
IN PHYSIOLOGY READINGS, REVIEW AND EMPHASIZE VERTEBRATE MATERIAL ONLY			
9.	3/18-3/22	Tissues, Skin, Bones	P. 192-197, Ch. 29
10.	3/25 – 3/29	Muscles/Circulation	Ch. 29, 31

Final Report, Regeneration Investigation, due on or before 4/1 at beginning of class

11.	4/1-4/5	Circulation/Respiration	Ch. 31

EXAM 3 4/9, PIERCE 101, 8 AM, COVERS THROUGH HEART

12.	4/8-4/12	Introduction to Immunity; Digestion	Ch. 35, 32
13.	4/15-4/19	Excretion; Reproduction	Ch. 30; p. 145-153
14.	4/22-4/26	Neural Control	Ch. 33

Zoology Poster Day Date 4/23 (tentative)

15.	4/29	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 15th; you may be able to get by with an earlier edition if one is available. See me if you have questions.

This text is important but is not required. There will be a copy of the text in the library, you may share with a colleague, or buy your own!

Laboratory:

- **General Zoology Laboratory Guide, by Charles F. Lytle. (required) Current edition is the 16h. Previous edition will be OK; see me if questions.**
- **Dissection Kit (required)**

Available Additional Materials -- The "writing about biology" handbook will be available on reserve in the library. You may find it useful in your write-ups.

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.

II. Additional Course Information

- This course is classified as **writing rich.** You will have two major research reports of independent laboratory investigations, a poster presentation that includes writing and poster construction, and additional writings in the classroom and outside of class.
- This class has a Blackboard site which you will find helpful. Many of the web sites, posted lab outlines, photomicrographs, and study hints will be very useful.

- 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 242, 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.

III. Evaluation

Tentative point totals for grading are as follows:

Exams 3 @ 100	300
Lab Exams 4@50	200
Lab Write-ups and Additional Writing	about 100
(two formal lab reports and one poster @25 each, additional writings in/out of class)	
Final Exam	175
Total	approximately 775

I use the (+/-) scale for grading

- 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 to take pictures during lecture exams or at any time in the laboratory. Computers may not be used in lecture or lab without permission.
- 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.

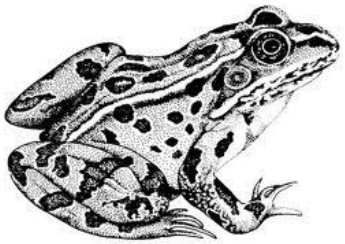
"Student work submitted as part of this course may be reviewed by Oxford and Emory faculty/staff for the purposes of improving instruction and enhancing Emory education."

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

By appointment or chance. You will find that I am on campus from about 8:00-5:00 most days 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 – Spring 2013

Date	**Topic**	**Reading (Lytle/Meyer, 16th)**
1/24	Protista	6
1/31	Cnidaria and Porifera Dissection: *Grantia, Metridium, Aurelia, Gonionemus* **Investigation #1—Stentor**	7-8
2/7	Platyhelminthes	9
2/14	**LAB EXAM 1, PIERCE 119, 8 AM, THROUGH PLATYHELMINTHES**	
2/14	Pseudocoelomates Dissection: *Ascaris* **Investigation #2, Regeneration**	9 (rotifers) 12
2/21	Mollusca Dissection: *Venus*, *Loligo*	10
2/28	Annelida Dissection: *Lumbricus*	11
3/7	**LAB EXAM 2, PIERCE 119, 8 AM, THROUGH ANNELIDA**	
3/7	Arthropoda Dissection: *Procambarus or Callinectes*	13, (crayfish)
	Spring Break	***March 11-15***
3/21	Echinoderms, *Amphioxus*, *Rana* bones Demos: Echinoderms, prechordates, primitive fishes **Investigation #3—Cardiac Physiology**	14, 15, 18
3/28	Vertebrate Tissues Dogfish, *Rana* muscles Demos: Teleost fishes	16, 18

4/4 LAB EXAM 3, PIERCE 119, 8 AM, THROUGH RANA BONES (no muscles)

4/4	*Rana* internal Demos: amphibians, reptiles	18
4/11	Open lab for work or review	
4/18	Mammal demos *Sus*	19

4/25 LAB EXAM 4, PIERCE 119, 8 AM, THROUGH *SUS*