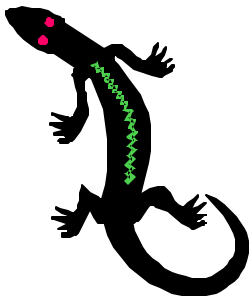


# *Biology 142*

## *General Biology II with Laboratory-Spring 2005*

**Steve Baker**
**Office: Pierce 117**
**Phone: 784-8446**

## *Course Objectives*:

1. Survey of the Kingdoms Fungi, Archaea, Eubacteria, and Protista with emphasis on the form, function, and medical importance of each group.

2. Describe basic developmental processes in invertebrate and vertebrate organisms.

3. Survey of the form and function of the invertebrate animals 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.

4. Review of basic vertebrate biology and classification (lab) and physiology (lecture).

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 |
|---|---|---|---|
| ***Review of Invertebrate Diversity*** | | | |
| 1. | 1/19-1/21 | Monera<br>Group study project: Fungi | Campbell Ch. 25 |
| 2. | 1/24-1/28 | Monera / Protista | Campbell Ch. 25<br>H Ch. 11 |
| 3. | 1/31-2/4 | Protista, Porifera / Cnidaria | H Ch. 11,12,13 |
| 4. | 2/7-2/11 | Cnidaria, Development | H Ch.13, 8 |
| | **2/11, Writeup for First Investigation due, 5 PM** | | |
| 5. | 2/14-2/18 | Systematics, Platyhelminthes, | H Ch. 9:185-188<br>Fig. 10.13, Ch. 14 |
| **EXAM 1** | **2/24,** | **PIERCE 101, 8 AM, COVERS THROUGH SYSTEMATICS** | |
| 6. | 2/21-2/25 | Pseudocoelomates, | H Ch. 15 |
| 7. | 2/28-3/4 | Mollusca, | H Ch. 16 |
| | | **FALL BREAK!! Oct. 11-12** | |
| 8. | 3/7-3/11 | Annelida | H Ch. 17 |
| 9. | 3/21-3/25 | Echinoderms, Prechordates<br>Intro to Chordates | H Ch. 22 ,23 |
| ***Review of Vertebrate Physiology*** | | | |

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

**EXAM 2 3/10, PIERCE 101, 8 AM, COVERS THROUGH MOLLUSCA**

| | | | |
|---|---|---|---|
| 10. | 3/28-4/1 | Chordate Tissues<br>Support, Protection, Movement | H Ch. 9, 179-155 |

3/28 ***Second Investigation Writeup due by 5 PM***

| | | | |
|---|---|---|---|
| 11. | 4/4-4/8 | Circulation | H Ch. 31 |
| 12. | 4/11-4/15 | Gas Exchange, Intro Digestion | H Ch 31, 666-675<br>32:682-693 |

**EXAM 3 4/12, PIERCE 101, 8 AM, COVERS THROUGH HEART ANATOMY/CONDUCTION**

| | | | |
|---|---|---|---|
| 13. | 4/18-4/22 | Digestion, Intro Excretion | H Ch. 32:682-693<br>Ch. 30: 641-646 |
| 14. | 4/25-4/29 | Excretion / Immunity<br>Neural Control | H Ch. 35<br>H Ch. 33 |

***Poster Day for Third Investigation; TBA***

| | | | |
|---|---|---|---|
| 15. | 5/2 | Chemical Control | H. Ch. 34 |

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

## *Course Information:*

**I. Text: Biology of Animals, Hickman, Roberts, and Larson. Seventh Edition**

Your Campbell text from 141 will be used for some assignments

**II. Laboratory**: **A. Laboratory Studies in Integrated Principles of Zoology, by Hickman, Hickman, Kats (required)**

**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. It will be very useful**. In addition, the 141 lab manual will be used for at least two labs in 142.**

**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 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 material covered in your text readings. Pay particular attention to assigned reading topics and to broad topics not covered in lecture.

- I use the (+/-) scale for grading.

- Tentative point totals for grading are as follows:

| | |
|---|---|
| Exams 3 @ 100 | 300 |
| Lab Exams 3@50 | 150 |
| Lab Write-ups and Additional Writing (two formal lab reports and one poster @25 each) | 75 |
| Final Exam | 175 |
| Total | 700 |

- 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. Digital photography of demonstration materials is not permitted.

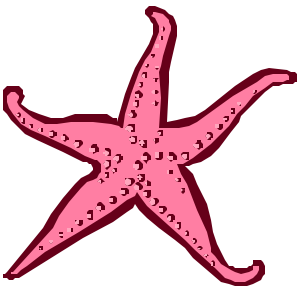
- Exams generally are not made up, unless you have a family emergency or severe illness. If you must miss the exam, you need to let me know ASAP. Exams are typically not rescheduled due to class conflicts or "rough weeks"-- it is part of your job to plan ahead for such contingencies.

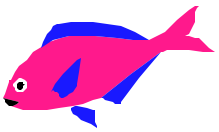
**IV. Honor Code**:

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 the office from 8-9 MWF, 9-11 Tu Th, or you can make an appointment at other times. I am generally available at any time, however, and I welcome the chance to talk to you, whether it involves class work or is just to visit!





# *Biology 142*
# *Laboratory - Fall 2005*

| **Date** | **Topic** | **Reading** |
|---|---|---|
| 1/20 | No lab | |
| 1/27 | Kingdom Fungi | Morgan and Carter 372-385 |
| | Bacteriology - Kingdom Monera | Morgan and Carter, |
| | **Investigation #1** | Ex. #13 |
| 2/3 | Protista and Porifera | Lytle, 5-6 |
| | Dissection: *Grantia* | |
| 2/10 | Cnidaria | Lytle, 7 |
| | Dissection: *Metridium, Aurelia, Gonionemus* | |
| **2/17** | **LAB EXAM 1, PIERCE 119, 8 AM, THROUGH CNIDARIA** | |
| 2/17 | Development | Morgan and Carter, Ex. #24, Lytle, 4 |
| 2/24 | Platyhelminthes and Pseudo-coelomates | Lytle, 9-10 |
| | Dissection: *Ascaris* | |
| | **Investigation #2** | |
| 3/3 | Mollusca | Lytle, 11 |
| | Dissection: *Venus*, *Loligo* | |
| **3/10** | **LAB EXAM 2, PIERCE 119, 8 AM, THROUGH MOLLUSCA** | |
| 3/10 | Annelida | Lytle, 12 |
| | Dissection: *Lumbricus* | |
| 3/24 | Arthropoda | Lytle, 13 |
| | Dissection: *Procambarus* | |
| | **Investigation #3—Cardiac Physiology** | |
| 3/31 | Echinoderms, *Amphioxus*, | Lytle, 14, 15 |
| | Demos: Echinoderms, prechordates, | |

primitive fishes

| | | |
|---|---|---|
| **4/5** | **LAB EXAM 3, PIERCE 119, 8 AM, THROUGH PRIMITIVE FISHES** | |
| 4/7 | Vertebrate Tissues, Dogfish, *Rana* (bones, skin frog, frog muscles)<br>Demos: Teleost fishes, amphibians | Lytle, 16, 18, 2 |
| 4/14 | Open lab, review muscles<br>Demos: reptiles | |
| 4/21 | *Rana* internal<br>Demos: birds | Lytle, 18 |
| 4/28 | *Sus*, sheep brain<br>Demos: mammals | Lytle, 19 |
| 5/2 | Lab closed at 8 AM | |
| **5/3** | **LAB EXAM 4, PIERCE 119, 8 AM, THROUGH *SUS*** | |