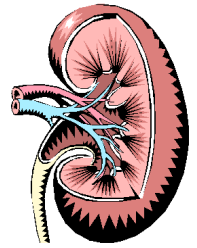




# COURSE SYLLABUS FOR BIO 122 - SPRING 2009

**COURSE INSTRUCTOR AND LABORATORY COORDINATOR:  
DR. KENNETH M. KLEMOW**



## Lecture Outline

<u>Topic</u>	<u>Readings in Raven et al.</u>
I. Course introduction	
II. Issues in basic and applied biology	1-16
III. Macroevolution and taxonomy: concepts and methodology	415-470
IV. Issues in biodiversity, species conservation and invasives	1205-1208; 1237-1260
V. Prokaryotic organisms	539-560
VI. Simple eukaryotes	
A. Kingdoms Archezoa and Protista	561-580
B. Kingdom Chromista	561-580
VII. Plant biology	
A. Green algae and bryophytes	581-588
B. Seedless vascular plants and gymnosperms	588-596
C. Angiosperms	
1. General features, floral biology, reproduction	596-602; 836-850
2. Morphology and anatomy	717-756
VIII. Kingdom Fungi	603-620
IX. Animal biology	
A. General overview	621-638
B. Parazoa	638-639
C. Acoelomates and Pseudocoelomates	640-652
D. Protostomes (Mollusca, Annelida, and Arthropoda)	653-675
E. Invertebrate deuterostomes (Echinodermata, primitive Chordata)	676-684
F. Fish (agnathans, Chondrichthyes, bony fish)	684-690
G. Herpefauna (amphibians and reptiles)	691-699
H. Birds	700-703
I. Mammals	
1. Diversity	704-716
2. Animal bodily organization and tissues	851-883, 943-962
3. Digestive system	963-982
4. Respiratory system	1000-1016
5. Circulatory system	984-1000
6. Excretory system	1023-1038
7. Nervous and sensory systems	884-918

## Laboratory Schedule

<u>No.</u>	<u>Date</u>	<u>Topic</u>	<u>Unit in Eberhard</u>
	Jan. 12 – 16	No lab	
1	Jan. 19 – 23	Introduction to BIO 122 labs	Workbook
2	Jan. 26 – 30	Classification, Introduction to biodiversity informatics	Topic 13
3	Feb. 2 – 6	Survey of Monera, Protista, and Chromista	Topics 14, 15
4	Feb. 9 – 13	Survey of plants I: Seedless plants and gymnosperms	Topics 15, 17
5	Feb. 16 – 20	Survey of plants II: Angiosperms	Topics 22, 23
6	Feb. 23 – 27	Fungi and lower animals	Topics 16, 18
7	Mar. 9 – 13	Roundworms, mollusks and annelids	Topics 18, 19
8	Mar. 16 – 20	Arthropods and echinoderms	Topic 20
9	Mar. 23 – 27	Chordates	Topic 21
10	Mar. 30 – Apr. 3	Mammalian body overview and digestion	Topic 25
11	Apr. 6 – 17	Respiration and circulatory system (structure & function)	Topics 26, 27, 28
12	Apr. 20 – 24	Excretion, reproduction, nervous and sensory systems	Topics 29, 30

## Resource and Policy Information

### REFERENCE MATERIALS

Text: Raven, P.H., G.B. Johnson, J.B. Losos, K.A. Mason, S. R. Singer. 2008. *Biology* 8/e. McGraw-Hill.

Lab. Manual: Eberhard, C. 1996. *General Biology Laboratory Manual*. Saunders Publishers.

Optional (but highly recommended): Pechenik, J.A. 2004. *A Short Guide to Writing about Biology* 5/e. Pearson Longman, Inc.

Podcast site: <http://itunes.wilkes.edu>. Then "BIO 122" link in iTunes browser.

### GRADING POLICY

<u>Point distribution</u> :	4 lecture exams	@ 100 points each	= 400 points
	3 lab quizzes	@ 50 points each	= 150 points
	CPS questions	@ 1 point each	= 25 points
	<u>Lab workbook</u>		= 100 points
	Total number of points		= 675 points

Notes: All exams and quizzes are multiple choice and computer graded.  
The final exam and quiz are not cumulative and will count the same as the other exams / quizzes.  
Coverage on exams is based on lectures, text readings, and podcasts.  
Bonus questions will be provided on each exam and throughout the semester on the course webpage.

If class does well (class mean exceeds 75%), grades will be as follows:

$\geq 92\% = 4.0,$	$85\% - 92\% = 3.5,$	$80\% - 85\% = 3.0,$	$75\% - 80\% = 2.5,$
$70\% - 75\% = 2.0,$	$65\% - 70\% = 1.5,$	$60\% - 65\% = 1.0,$	$\leq 60\% = 0.0.$

If class does more poorly, cutoffs will be adjusted downward. See course webpage for last year's cutoffs. Class statistical data will be provided after each exam and quiz, and will be posted to the web.

### EXAM AND QUIZ SCHEDULE

<u>Date</u>	<u>Exam or Quiz Title</u>
Feb. 10	Lecture Exam #1
Feb. 17	Lab Quiz #1 (covering labs 1-4)
Mar. 10	Lecture Exam #2
Mar. 31	Lab Quiz #2 (covering labs 5-8)
Apr. 7	Lecture Exam #3
May. ??	Lecture Exam #4, Lab Quiz #3 (covering labs 9-12)

### ATTENDANCE POLICY:

Attendance is expected at each lecture and lab session, and will be taken. Students missing more than three consecutive sessions will be readmitted only with permission from both a Dean of Student Affairs and the Department Chairman. Students missing a lab must arrange to make it up; those who fail to do so will receive a grade of 0 for the quiz questions and the notebook assignment that pertain to that lab. Students who miss a lecture exam or lab quiz will not be given a make-up. Instead, if the excuse is legitimate as determined by the instructor, the grade for that exam/quiz will be the average of those that remain. If the excuse is not legitimate, a grade of 0 will be assigned.

### ACADEMIC HONESTY POLICY

As young scientists, you are expected to adhere to a high ethical standard. Details concerning appropriate lab behavior are detailed in Appendix 1 of the BIO 122 Laboratory Instructions booklet that you are to purchase. In lecture, you are to be courteous to your fellow classmates and the instructor, sign into class honestly, and take exams and quizzes without looking at fellow classmate's work or relying on aids like notes or electronic media. Violating any academic honesty policy can lead to lost points, expulsion from the course, or disciplinary action by the University.

### OTHER INFORMATION

Office: SLC 351 Phone: 570-408-4758 Office Hours: M-F 10:00-11:00 email: [Kenneth.klemow@wilkes.edu](mailto:Kenneth.klemow@wilkes.edu)

Course Webpage: <http://klemow.wilkes.edu/BIO-122.html> IM ScreenName: DrKlemow

Study Sessions: (led by Mrs. Debra Chapman): Thursdays, 11:30 A.M., SLC 101

## **BIO 122 COURSE OBJECTIVES - I**

### I. Short-term overall objectives:

1. Biology majors will gain an understanding of organismal biology that will be needed for successful completion of subsequent coursework in Biology.
2. Students majoring in sciences other than biology will gain an understanding of organismal biology that will complement other coursework.

### II. Long-term overall objective:

1. All students will gain a solid foundation in biology that will be useful on a lifelong basis, and will allow graduates of the course to can make intelligent decisions and provide leadership on issues related to biology.

### III. Skill-related objectives:

1. Students will develop the ability to think about biology (and hopefully other disciplines) analytically, synthetically, critically and creatively.
2. Students will learn that biology (like all sciences) involves two components: (1) a factual body of knowledge and (2) a process by which that knowledge is obtained and disseminated.
3. Students (especially freshmen) will be introduced to a pedagogic style that involves a reasonably rapid rate of dissemination of a large body of information.
4. Students will be introduced to sources of biological information beyond the lecture-notes and textbook, including on-line resources.
5. Students will gain a hands-on exposure to the subject matter, and will relate their firsthand observations to biological theory.
6. Students will learn how to appropriately communicate their biological observations, qualitatively and quantitatively, orally and in writing.
7. Students will be introduced to an examination style that uses simplified k-type multiple-choice questions.
8. Students will think in a more sophisticated fashion about their career objectives in relation to biology.

## BIO 122 COURSE OBJECTIVES - II

### IV. Subject-matter related objectives:

Having successfully completed this course, students will have a better understanding of:

1. Critical issues that bear upon biology, especially in relation to societal concerns, education, research, and biological informatics.
2. The aims of organismal biology, and its relationship to cellular / molecular biology and other natural sciences.
3. Historical and current approaches to understanding biological diversity and its classification.
4. Concepts pertaining to phylogenetic classification, including cladistics and problems with the Biological Species Concept.
5. Issues pertaining to nomenclature
6. Issues pertaining to regional and global biological diversity, including species conservation and problems with invasive species
7. Characteristics, phylogenetic diversity, ecology, and economic importance of the prokaryotic kingdoms (Monera and Archaeobacteria)
8. Characteristics, phylogenetic diversity, ecology, and economic importance of the simple eukaryotic kingdoms (Protista and Chromista)
9. Characteristics, phylogenetic diversity, ecology, and economic importance of the complex eukaryotic kingdoms (Plantae, Fungi, and Animalia)
10. Structure and function of the mammalian body, including tissues and key organ systems including the digestive, respiratory, circulatory, excretory, reproductive, and nervous.

