

BIOL 155 - Animal Biology
 TR 8:25 – 9:40 AM, BIOS 144
 California State University, Los Angeles

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 Office hours Th 11 AM - 1:00 PM

Course web page – Blackboard/Webct

<http://www.calstatela.edu/academic/aa/ess/elps/elpsblackboard.php>

Winter 2011 Lecture Schedule

<u>Date</u>	<u>Lecture Topic</u>	<u>Readings (Campbell, Reece, Taylor, Simon & Dickey, 2nd Custom Edition for CSULA, 2009)</u>
Jan 04	Course Introduction/What is Biology?	
06	Introduction to the Scientific Method	Ch. 1
11	Cell Structure and Function	Ch. 4; 5.1-5.8; 5.13-5.16
13	Tissues, Organ Systems and Homeostasis I	Ch 20
18	Tissues, Organ Systems and Homeostasis II	Ch 20
20	Integration: Nervous Systems	28.1-28.2; 28.10-28.13; 28.15-28.17
25	Exam #1 (100pts.; What is Biology? Through Tissues, Organ Systems and Homeostasis)	
27	Integration: Endocrine Systems	Ch. 26
Feb 01	Animal Behavior	Ch. 35
03	Feeding and Digestion I	21.1-21.13
08	Feeding and Digestion II	21.1-21.13
10	Exam #2 (100 pts.; Integration: Nervous Systems through Animal Behavior)	
15	Respiration	Ch. 22
17	Circulation	Ch 23
22	Reproduction	27.1-27.4
24	Development Including Mitosis and Meiosis	Ch. 8; 27.5; 27.9-27.12; 27.15
Mar 01	Exam #3 (100 pts.; Feeding and Digestion through Circulation)	
03	DNA to Proteins to Evolution and Natural Selection	10.2-10.4, 10.6-10.9, 10.11-10.16, 10.20, 13.1-13.8, 13.11-13.15, 13.17
16.2-19.1-	Evolution: Animal Diversity I	14.1-14.3, 15.5-15.6, 15.14-15.19, 16.3, 16.6, 16.11, 17.3, 17.15; Ch 18; 19.8
10	Evolution: Animal Diversity II	14.1-14.3, 15.5-15.6, 15.14-15.19, 16.2-16.3, 16.6, 16.11, 17.3, 17.15; Ch 18; 19.1-19.8
15	EXAM #4 (100 pts.) (REPRODUCTION THROUGH ANIMAL DIVERSITY) TUESDAY, MARCH 15, 2011 @ 8:00 AM -10:30 AM, BIOS 144	

Course Description: This course uses animal biology as a vehicle for introducing non-science majors to scientific methodology, as applied to the life sciences, and to basic biological principles. The lecture portion of the course begins with a general discussion of cells and tissues, as related to understanding the structure (anatomy) and function (physiology) of the major organ systems found in animals. It continues with a discussion of these systems, taking an adaptational approach to understanding how these systems are modified in different groups of animals to allow them to meet the challenges of living in their specific environments. The course then covers evolution, first, by developing a basic understanding of inheritance and evolutionary processes, and, second, by a discussion of animal diversity. The laboratory portion of the course involves group exercises that illustrate and expand on the concepts presented in lecture. This course meets the University Block B - Natural Sciences general education requirement for a biological science with laboratory (B1). IT CANNOT

BE APPLIED TOWARD A BIOLOGY/MICROBIOLOGY OR MOST OTHER NATURAL SCIENCE MAJORS/MINORS.

Required Textbook: *Biology Concepts and Connections*, custom edition for Biology 155 CSULA, N.A. Campbell, J.B. Reece, M.R. Taylor, E.J. Simon and J. L. Dickey, Benjamin Cummings: San Francisco (2009)

Drop Policy: Please see the schedule of classes for information. No exceptions will be made to the established University deadlines and policies.

Academic Honesty Policy: Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at <http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation

Exams: Lecture exams will be multiple choice and will require that you supply a Scantron form (#882-E). There will be four exams covering current lecture material. **THERE WILL BE NO MAKE-UP EXAMS DURING THE REGULAR TEN WEEK QUARTER.** However, if exam #1, 2 or 3 is missed with a valid (for example, illness) and verifiable (for example, a signed note from a physician) excuse, you can make-up the missed exam with a cumulative final exam given during the second half of the regularly scheduled final exam session. This cumulative final exam will be taken only by students who have missed exams #1, 2 or 3 with a verified excuse. **YOU MUST TAKE EITHER EXAMS #1-4 OR THREE EXAMS AND THE CUMULATIVE FINAL EXAM IN ORDER TO RECEIVE A GRADE IN THE COURSE.**

Policy Regarding Correction of Errors in the Grading of Exams: You have one week from the time that the lecture exams are returned to report errors in the grading of the scantron forms or discuss appropriateness of alternative answers.

Cell phones are not allowed to interrupt class; a 5-point deduction will be applied to any student whose cell phone interrupts class or lab. No electronic devices/headphones are allowed during exams.

Recording Lectures: You may bring audio recorders to the front to tape lectures if you desire. **No videotaping.**

Grading: Final grades will be based on the following scale –

400 pts. Lecture grade = 4 X 100 pts lecture exams (50 questions @ 2 points per question)

450 pts. Laboratory grade (see laboratory syllabus for breakdown)

850 pts. total

A	= 91-100% (774 points or above)
A-	= 90-90.9% (765-773 points)
B+	= 89-89.9% (753-764 points)
B	= 81-88% (689-752 points)
B-	= 80-80.9% (677-688 points)
C+	= 76-79% (643-676 points)
C	= 60-75% (510-642 points)
D+	= 59-59.9% (499-509 points)
D	= 50-58% (425-498 points)
F	= below 50% (424 points or below)

Bio 155 - Animal Biology Laboratory
 BioSci room 273 or 268

Winter 2011 Laboratory Schedule

Week	Laboratory Title
1	Course Introduction; Introduction to the Scientific Method (ex. #1)
2	Chronobiology: The Study of Biological Rhythms (ex. #2) Introduction to the Library Research Process for Chronobiology: The Study of Biological Rhythms (ex. #3- download from website and bring to class) Introduction to the Scientific Paper (ex. #4)
3	Martin Luther King Jr. Holiday – NO LABS THIS WEEK ☺
4	Nervous System Experiment (ex. #6) (CHRONOBIOLOGY DATA DUE) Writing the Materials and Methods Section (pg. 41)
5	Animal Behavior Laboratory: Male Competition and Courtship Displays in the Siamese Fighting Fish (ex. #11); Writing the Results Section (pg. 42) (FIRST DRAFT OF MATERIALS AND METHODS SECTION DUE) Students should <i>pick-up tabulated chronobiology data</i>
6	Digestive System Experiment (ex. #7) Writing the Introduction Section (pg. 41) (FIRST DRAFT OF RESULTS SECTION DUE) <i>Materials and Methods Section returned</i>
7	Human Respiratory and Circulatory Function (ex. #8) Writing the Discussion and Literature Cited Sections (pg. 42-44) (FIRST DRAFT OF INTRODUCTION SECTION DUE) <i>Results Section returned</i>
8	Evolution and Natural Selection (ex. #9) How to Put Your Final Paper Together (FIRST DRAFT OF DISCUSSION AND LITERATURE CITED SECTIONS DUE) <i>Introduction Section returned</i>
9	What is an Animal? (ex. #10) <i>Discussion and Literature Cited Sections returned</i>
10	Laboratory Final Exam (Cumulative – multiple choice) PEER EVALUATIONS DUE FINAL PAPER DUE

Required laboratory textbooks:

Laboratory Exercises in Animal Biology, Krilowicz and Henter, 1999 revision

It will be the responsibility of the student to download and print certain laboratory materials posted to the course website at <http://instructional1.calstatela.edu/rstewar/> under *Biology 155 on the Course List*.

Late Work Policy: Late drafts or papers will have 10% (one grade) deducted per day, including weekends. All assignments are due at the beginning of the regularly scheduled laboratory period. The deadline for submission of your final paper is 24 hours prior to your final lecture examination. This deadline provides the laboratory instructors with adequate time to assess and return your paper to you at the final exam. Late penalties still apply.

Laboratory Exercises: Laboratory exercises will be turned in at the end of the laboratory period.

Laboratory Quizzes: Five pop quizzes worth 10 points each will be given during the quarter. The dates and times of these quizzes are at the discretion of the individual instructors. The lowest quiz score will be dropped.

Peer Evaluations: The other group members will evaluate your work in your laboratory group. Forms with peer evaluation criteria will be supplied early in the quarter so that all group members are aware of these criteria. Each group member will evaluate all other team members. The mean of the scores submitted by your peers will be used in determination of your grade.

Final Paper and Drafts: All drafts and the final paper must be typed or produced with a word processing program. Individual instructors *may* accept drafts and papers submitted as attachments to email messages.

Policy Regarding Correction of Errors in Grading of Laboratory Assignments: All errors in the grading of any laboratory assignments must be reported to the laboratory instructor of record by Friday of tenth week of the quarter. The only exceptions to this policy are assignments due at the 10th week laboratory meeting. Concerns about grading of these assignments must be reported and discussed with the laboratory instructor of record at the final examination.

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Grading:

160 pts. 8 laboratory exercises @ 20 pts./exercise

40 pts. 4 laboratory quizzes @ 10 pts./quiz

50 pts. Mean of peer evaluations

10 pts. Chronobiology Data

10 pts. Introduction, draft

10 pts. Materials and Methods, draft

10 pts. Results, draft

10 pts. Discussion and Literature Cited, draft

100 pts. Final Paper

50pts Laboratory Final Exam

450 pts. Total

Course Objectives:

- 1) The student will demonstrate an understanding of and be able to apply the steps in the scientific method while conducting an experiment. (Lec. #2, Lab Ex. #1-2,7 and 11)
- 2) The student will demonstrate an understanding of the differences between Biology and the other natural sciences and will be able to give a definition of a living organism. (Lec. #1)
- 3) The student will demonstrate an understanding of the hierarchical nature of animal bodies and will be able to -
 - a) define, identify and give functions for the major cellular organelles. (Lec. #3, Lab ex. #5)
 - b) give a definition of a cell. (Lec #3, Lab ex. #5)
 - c) define, identify and give functions for the major animal tissues. (Lec. #4, Lab ex. #5)
 - d) identify the tissues found in major organs. (Lab ex. #5)
 - e) define, identify and give functions for the major organ systems found in animals. (Lec. #4-13, Lab ex. #5-8)
- 4) The student will be able to define homeostasis and give examples of negative feedback loops operative in animals. (Lec. #4-7, Lab ex. #2,6,8)
- 5) The student will demonstrate an understanding of the basic structure and function of representative organ systems found in animals. (Lec. #5-13, Lab ex. #6-8)
- 6) The student will demonstrate a knowledge of the great diversity and adaptation in design of these systems across the animal kingdom. (Lec. #5-13, Lab ex. #6-8)
- 7) The student will demonstrate an understanding of the basic steps in animal development, including gamete formation using meiosis. (Lec. #14)
- 8) The student will demonstrate an understanding of the basic concepts of genetic inheritance including the structure and function of DNA, RNA and proteins. (Lec. #15)
- 9) The student will demonstrate an understanding of the basic concepts of evolution including -
 - a) the concept of natural selection. (Lec. #15, Lab ex. #9)
 - b) the definition of a species. (Lec. #16, Lab ex. #9)
 - c) evidence for natural selection and evolution. (Lec. #15-16, Lab ex. #9)
- 10) The student will demonstrate an understanding of the great diversity within the animal kingdom, particularly within the context of evolution. (Lec. #16, Lab ex. #10)
- 11) The student will demonstrate an understanding of the genetic and environmental basis of animal behavior and give examples of a variety of different types of behaviors. (Lec. #8, Lab ex. #2,11)
- 12) The student will demonstrate knowledge of the conventions of scientific writing by preparing a report of the findings from the experiment conducted in 1) above. (Lab ex. #4, Lab weeks 2-10)
- 13) The student will demonstrate an understanding of how to use library reference materials in scientific writing. (Lab ex. #3, Lab weeks 2-10)