

BSC 2009L – Laboratory in Biological Sciences Syllabus – Spring 2014

I. Course Information

Laboratory Location: 315 Rolfs Hall
Biology Office: 220 Bartram Hall, 392-1175
Lab Coordinator: Kent A. Vliet, PhD, Department of Biology, 208 Carr Hall, kvliet@ufl.edu
Required Text: Lab manual available at Target Copy.
Homepage: www.bsc.ufl.edu/2009L.html SAKAI: <https://lss.at.ufl.edu/>

II. Instructor

My TA: _____
Office: _____
Office Hours: _____
Email: _____

III. Pre(Co)Requisite

BSC 2007 - Cells, Organisms, and Genetics, BSC 2008 - Evolution, Ecology and Behavior, or BSC 2009 - Laboratory in Biological Sciences. Officially, BSC 2007, 2008, or 2009 are pre- or co-requisites for BSC 2009L. However, any biology course, including high school biology, and access to a biology text will probably be adequate.

IV. Course Description

This is not a laboratory course in the traditional sense of the word. Few actual investigations will be conducted. However, we will provide evidence and understanding of biological principles through a variety of visual and multimedia approaches, allowing an interactive approach to the understanding of aspects of biology.

The amazing intricacies and complexities of life tend to obscure basic underlying relationships among all living things. This course attempts to elucidate principles of biological organization and function that tie together seemingly unrelated forms. The tendency of species to change over time (*i.e.*, evolution) will provide the basis of our approach to interpreting biological phenomena. Biological principles will be examined at all levels, from cellular, to organs and whole organisms, and to ecosystems. Attention will be paid to the relationships between structure (anatomy) and function (physiology) at all levels of organization. The course includes a study of human body structures and functions. Several lab exercises emphasize biological processes using humans as models. Ecological problems related to human impact on the environment will also be discussed.

V. Grading

Your BSC 2009L grade will be based on raw scores from quizzes, worksheets, data sheets and lab exercises. Specific assignments are detailed in a point breakdown sheet provided with this syllabus. Quizzes generally cover material from the previous lab exercise as well as assigned readings for the present lab. Final letter grade will be assigned based on percentage of the total points earned.

Minimum grade cutoffs are listed below. These may be lowered ("curved") at the discretion of the instructors, but they will not be raised. In other words, if you receive 90% of the possible points, you are guaranteed to earn an A grade. Scores will not be rounded (*i.e.*, 89.9% is not 90%).

Point Range (%)	Letter Grade
≥ 90.0	A
≥ 86.7	A-
≥ 83.3	B+
≥ 80.0	B
≥ 76.7	B-
≥ 73.3	C+
≥ 70.0	C
≥ 66.7	C-
≥ 63.3	D+
≥ 60.0	D
≥ 56.7	D-
< 56.7	E

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

Extra Credit: There is no extra credit available in this course.

Special Treatment: Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason**. Plan to do well on all exams and other assessments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know *before* the exams rather than after.

VI. Reading Assignments

You should review fully each laboratory assignment *prior* to the laboratory period. In most cases you will be unable to complete the observations and experiments fully and efficiently during the lab period unless you know exactly what is to be done before you walk into the laboratory. Reading assignments are included in this syllabus. Weekly quizzes are based partially on the reading assignments.

VII. Expectations

Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus. Not having read the information in this syllabus will not constitute an excuse for missing an assignment, exam or other assessment.

VIII. Lab Policies

A. Excused absences

You are expected to attend the lab section for which you are registered. If you miss your lab, notify your instructor immediately by e-mail. You must have a **valid, documented excuse** for missing your regular lab section to be allowed to make up a lab without penalty. **The validity of excuses for missed labs or assignments will be determined by your instructor.** If you do not have documentation for missing your lab, you *may be* given the opportunity to makeup assignments of graded materials **at the discretion of your instructor**. This work will be done outside of the laboratory and will be penalized 20% of the total points. In this case, missed quizzes cannot be made up. *Missed labs generally must be made up within the same week.* **If you know in advance that you are unable to make your regular sections, contact your lab TA earlier in the week.**

B. Illness

If you are ill with an infection that may be contagious by casual contact (e.g., a cold or flu), you should not attend class. Furthermore, if you have a fever associated with any illness, you should not attend class until you have been free of fever for at least 24 hours. The instructor reserves the right to ask any student to leave the classroom at any time if there is a reasonable likelihood that the student's presence in the classroom places other students at substantial risk of infection.

C. Assignment deadlines

Graded assignments are due at the *beginning* of the lab session one week after the actual lab work was done, unless otherwise noted. Assignments turned in after the start of the lab session will be considered late work. NOTE: Students who attend a lab session other than their officially registered section and perform an experiment which require a data sheet or lab report *must still turn in their work at the beginning of their officially registered section on the following week*. If you are unable to turn in your work during your regular lab section and are not able to hand it in directly to your instructor, DO NOT leave an assignment at your instructor's office. Rather, (1) make a photocopy of your lab report for safekeeping and (2) hand in the original to the staff of the departmental office (**220 Bartram Hall**) during regular office hours (**8 a.m.- 4 p.m.**).

D. Late work

Late work will be penalized 10% of the total points per day (weekends, *i.e.*, Friday to Monday, are counted as two days and U.F.-recognized holidays are not counted). NOTE: The weekends preceding and following the Semester Break holidays will be counted.

E. Participation

Students may be allowed to turn in assignments on which they did not participate in the collection of data, *at the discretion of the lab instructor*. These assignments will be penalized 20% of the points.

F. Lab cleanliness

No food or drink is permitted in the labs and students are expected to leave the lab as clean and orderly as it was when they arrived for class. NOTE: All scraps of paper, paper towels, broken cover slips and slides, masking tape, and any other trash must be properly disposed of by the students themselves.

G. Lab attire

Students are not allowed to wear sandals or open-toed shoes in the laboratories.

IX. Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement: *"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."*

In addition, on all work submitted for credit the following pledge is either required or implied: *"On my honor I have neither given nor received unauthorized aid in doing this assignment."*

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

X. Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drp/services/>. Note that the student should provide documentation of a requirement for accommodation **by the second week of labs**. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

XI. Counseling Center

Many students experience test anxiety and other stress related problems. "A Self Help Guide for Students" is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their web site: <http://www.counsel.ufl.edu/>.

XII. BSC 2009L Laboratory Schedule – Spring 2014

Laboratory topics and reading assignments for this course are listed below. This is a tentative schedule; the dates and coverage of specific topics are subject to change.

Week	Week of	Laboratory Topic	Assignments Items indicated in bold print are to be read before lab.
1	6 Jan	**** NO LABS ****	
2	13 Jan	Introduction	1. Lecture: Course introduction 2. Microscopes – Chapter 2
3	20 Jan	Cells	1. Lecture: Scientific Method and Cells – Chapter 1 & 3 2. Lab: Cheek & Hydrilla Cells 3. <i>Homework</i> : Complete Cells Datasheet
4	27 Jan	DNA	1. Lecture – Chapters 4 & 5 2. Lab: DNA Extraction 3. <i>Homework</i> : Complete DNA Extraction Datasheet Read Article #1 Article #1 Worksheet
5	3 Feb	Inheritance	1. Lecture – Chapters 6 & 7 2. Discussion: Article #1 (Student led discussion) 3. Lab: Human Traits (Datasheet due by the end of class) 4. <i>Homework</i> : Study for Quiz #1
6	10 Feb	Microevolution Quiz #1	1. <i>Quiz #1</i> 2. Lecture – Chapter 9 3. Lab: Beetle Breeding Simulation 4. <i>Homework</i> : Complete Beetle Datasheet Museum Scavenger Hunt Datasheet Article #2 Article Worksheet #2
7	17 Feb	Macroevolution	1. Lecture 2. Discussion: Article #2 (Student led discussion) 3. Lab: Skull Lab and Museum Scavenger Hunt

			4. <i>Homework</i> : Complete Skull Datasheet
8	24 Feb	Human Anatomy Quiz #2	1. Lecture – Chapter 14 2. Take Quiz #2 3. Lab: Human Anatomy 4. Complete Anatomy Datasheet 5. <i>Homework</i> : Read Article #4 Worksheet #4
9	3 MAR	**** NO LABS ****	
10	10 Mar	Sexual Reproduction	1. Lecture – Chapter 15 2. Lab: Sexual Reproduction 3. Discussion: Article #4 (Student led discussion) 4. Complete the Urogenital Datasheet 5. <i>Homework</i> : Complete Reproduction Postlab 6. Study for Quiz #3
11	17 Mar	Sensory Physiology Quiz #3	1. Lecture – Chapter 16 2. Lab: Sensory Physiology 3. Article Discussion 4. Complete Physiology Datasheet 5. <i>Homework</i> : Native vs. Exotic Plant Prelab
12	24 Mar	Ecology & Florida's Ecosystems	1. Lecture – Chapters 10 & 11 2. Lab: Invasive vs. Native Species Identification 3. <i>Homework</i> : Complete Native vs. Exotic Datasheet Read Article #3 Worksheet #3 Debate Write-Up
13	31 Mar	**** NO LABS ****	
14	7 Apr	Human Impact	1. Lecture – Chapter 13 2. Discussion: Article #3 (Student led discussion) 3. Lab: Debate
15	14 Apr	**** NO LABS ****	
16	21 Apr	**** NO LABS ****	



XIII. Laboratory Assignment and Point Breakdown Sheet – Spring 2014

WEEK	ASSIGNMENTS	POINTS
1	**** NO LABS ****	
2	Introduction	
3	Cells Datasheet	___ 15
4	DNA Extraction Datasheet	___ 15
	Article #1 Worksheet	___ 5
5	Human Traits Datasheet	___ 15
6	Quiz 1	___ 15
	Beetle Breeding Datasheet	___ 15
	Article #2 Worksheet	___ 5
7	Skull Adaptation Datasheet	___ 10
	Museum Scavenger Hunt Datasheet (due in Reproduction lab)	___ 5
8	Anatomy Datasheet	___ 10
	Quiz 2	___ 15
9	**** NO LABS ****	
10	Urogenital Datasheet	___ 10
	Article #4 Worksheet	___ 5
	Reproduction Postlab	___ 10
11	Sensory Physiology	___ 15
	Quiz 3	___ 15
12	Native vs. Exotic Plant Species Prelab	___ 10
	Native vs. Exotic Plant Species Datasheet	___ 10
	Article #3 Worksheet	___ 5
13	**** NO LABS ****	
14	Debate Arguments	___ 10
	Debate Participation	___ 5
15	**** NO LABS ****	
16	**** NO LABS ****	
	Science Article and Presentation	___ 10
	Science Articles Discussion	___ 5
	TOTAL POINTS:	___/235

XIV. BSC Laboratory Safety

Work in the Biology laboratory may expose students to **inherently dangerous activities**. Students in the BSC laboratories may be exposed to chemicals (e.g., formaldehyde, organic solvents, acids, and other caustic chemicals), chemical fumes, laboratory equipment and supplies (e.g., scalpels, razor blades, glass slides, coverslips, and electrical equipment), toxic or irritating properties of living and dead animals, and other materials necessary to laboratory activities. Other possible hazards include broken glass on the floor or counters, combustible materials, and slippery spills.

1. Smoking, eating, and drinking are expressly forbidden and NOT allowed in the laboratory.
2. Locate the placement of safety equipment and supplies in the laboratory: safety shower, eye wash station, fire extinguisher, and first aid kit. Memorize these locations. You should understand the use of this equipment. Also note the locations of exits. Each laboratory has a chemical exposure manual. These include material safety data sheets on all hazardous chemicals or compounds to which you might be exposed in the BSC laboratory.
3. Students should follow instructions carefully, especially when hazardous conditions occur or hazardous materials are being used.
4. Students should dress appropriately in the lab. Gloves and protective aprons will be made available in the labs. Students may elect to supply their own gloves and protective aprons or laboratory coats. Only shoes that provide complete foot covering are allowed in the lab.
5. You should be familiar with fire procedures. Leave the building immediately should a major fire occur or if the fire alarm sounds. Notify the appropriate authorities -- don't assume someone else remembered to do it. Meet with other students and your instructor outside the building before leaving so that an accurate headcount may be made.
6. The safe use of specific equipment and tools (e.g., microscopes, slides, scalpels, and pipettes) will be demonstrated by the instructor during the laboratory sessions. Be sure you understand this usage and ask questions if you do not.
7. Never pipette by mouth. Always use a suction bulb or pipette aid.
8. Notify your T.A. IMMEDIATELY of any spills, breakages, or equipment malfunction.
9. Students should report all hazardous conditions to the instructor immediately.
10. All organisms, living or dead, should be treated with care and respect. Avoid direct handling when possible.
11. Students should clean up any supplies used and should return materials where they belong as instructed. Any material spilled should be cleaned appropriately. Report any hazardous spills or breakages.
12. Broken glass and sharp metal waste should be placed only in those receptacles marked for such disposal -- do not put these materials in normal trash receptacles.
13. Work areas must be left clean and dry prior to leaving the lab. Chemicals and reagents must be returned to their proper places.
14. You should always wash your hands before leaving the laboratory, even if you have not knowingly come in contact with any chemicals or biological fluids.