

Principles of Biology Lab 1

BSC2010L | Fall 2017

Contact Information

Teaching Assistant

Prabha Amarasinghe
contact via Canvas inbox
or email (pamarasinghe@ufl.edu)

Lab Coordinator

Kent A. Vliet, PhD
352-392-8130
kvliet@ufl.edu

Course Goals and Objectives

Course Goals

The primary goal of this course is to establish a coherent foundation of knowledge in biology and to prepare students for comprehension in advanced biology courses and science in general. Fundamental concepts discussed include the scientific methods by which we come to know things in science, the chemical composition and processes that make up all life, genetic processes and the means of inheritance of traits, the mechanisms and processes of natural selection, and adaptation and evolution of life on Earth. An additional course goal is to develop critical thinking skills for development of reasoned thought and for evaluation of life experiences.

Course Objectives

Objectives of the course will be achieved if, by its conclusion, students can:

- Describe a scientific hypothesis and identify testable predictions that logically follow
- Construct proper figures representing biological data, and interpret data represented in similar figures
- Understand the proper use and function of key types of laboratory equipment, such as microscopes, spectrophotometers, thermocyclers, and gel electrophoresis arrays
- Understand the importance of statistics in scientific sampling, determine appropriate statistical tests for particular types of data, understand the meaning of statistical significance, interpret statistic results and draw appropriate conclusions from them
- Describe the relationship between genotype and phenotype and identify methods by which genotype can be determined
- Determine the mode of inheritance of genetic traits based on ratios of phenotypes
- Identify the primary organs of representative invertebrates and their associated functions.
- Discuss the evidence that all living things are descended from a common ancestor

- Read, evaluate, and construct a phylogenetic tree

General Education Objectives for Biological Sciences

Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

The General Education objectives and the associated Student Learning Outcomes for Biological Sciences are achieved through inquiry-based and active-learning exercises in the laboratory, including prelab assignments, experimental design, quizzes, oral presentations, and completion of weekly lab notes and data sheets. These exercises are designed to reinforce, augment, and accompany learning objectives in the companion BSC 2010 lecture course. In particular, the BSC 2010L lab exposes students to the development and testing of specific hypotheses, collection and presentation of biological data, and analysis of statistical significance.

Learning Resources

Late Nite Labs

Part of your assignments will be completed using Late Nite Labs. They are simulations you will perform and answer questions about when you are finished.

To register, go to latenitelabs.com. You MUST use your ufl.edu address when registering. Course code will be announced on Canvas.

Carolina Biological Supply

Part of your assignments will be completed using materials from Carolina.com. To order your kit, go to the [BSC2010L Order Page](#). The code for the Carolina kit is 581442.

Lab Manual

Lab manual readings will be available in your Canvas course.

Help Resources

Canvas/eLearning Issues

Contact the help desk at:

- email: learning-support@ufl.edu
- (352) 392-HELP - select option 1
- Help Desk [home page](#)

Late Nite Labs

Contact Late Nite Labs at the options below. Do NOT contact the help desk for assistance.

- email: support@latenitelabs.com
- phone: 800-262-0518

University Support Services

College can be a very stressful time in a person's life. Resources are available on campus to help students meet academic goals and solve personal problems that may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See "[A Self Help Guide for Students](#)" or contact one of the following services:

1. [UF Counseling and Wellness Center](#), Radio Rd Facility, 392-1575
2. [Dean of Students Office](#), 202 Peabody Hall, 392-1261
3. [Career Resource Center](#), Reitz Union, 392-1601
4. [CLAS Academic Advising Center](#), Farrior Hall, 100 Fletcher Drive, 392-1521

Other Questions

If you have non-tech-support questions about other aspects of the course, check the following sources first to see if it is already answered, **before** e-mailing your instructors:

- Course Syllabus
- Start Here pages
- Course Announcements (this is the primary means that your instructor has to communicate with you in a timely manner)
- General Question discussion board in Canvas

If you still cannot find the answer to your questions

- If it is a question that others might find useful to know the answer to as well, post it to the General Question discussion board.
- If it is a question specific to you (e.g. account or grade specific), contact your instructor or TAs via Canvas inbox.

Learning Activities

Reading Assignments

You should review fully each laboratory assignment *prior* to beginning the pre-lab assignment. In most cases you will be unable to complete the observations and experiments fully and efficiently during the lab unless you know exactly what is to be done before you start the laboratory. Reading assignments are in each Lab overview on Canvas

Labs

Each lab will have a pre-lab and lab activity. Some may have post-lab activities as well.

Course Policies

Assignment Deadlines

Each lab will begin on a Monday and close on Sunday. Some labs have a two week component, in which case each part will adhere to this schedule.

Pre-Lab: Pre-labs will be due on Wednesday at 11:59pm EDT/EST. All readings should be done prior to completing the pre-lab.

Lab Activities: All lab activities must be completed/turned in by Sunday at 11:59pm. If it is a two week long lab, then only the part assigned for that week will be due. If a post-lab activity is assigned, it is due at the same time as the lab activities.

Late Work

Late work will not be accepted, unless there is written documentation from a doctor, the Dean of Students Office, or due to a documented technical issue. If there is an issue with you completing your assignments on time, contact your instructor immediately. Do not wait until the last minute to contact.

Participation

Some labs allow you to discuss answers in groups. You must adhere to the netiquette policies outlined below. While there isn't a strict rubric used with these discussions, participating in them actively will earn you points. You'll also be able to help and learn from each other in the process.

UF Policies

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."

Cases of plagiarism or other academic dishonesty will not be tolerated, and may result in grade penalties or other sanctions. In this course, academic dishonesty includes (but is not limited to) collaborating with other students on course assignments, discussing quiz questions or answers with other students, giving other students the password for locked quizzes, and plagiarism. If you have knowledge of 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 http://flexible.dce.ufl.edu/media/flexibleucefledu/documents/uf_policy_student_conduct.pdf

Plagiarism is also a violation of the Academic Honesty Policy, and will be treated as such, resulting in grade penalties or other sanctions. Please review <http://gethelp.library.upenn.edu/guides/engineering/ee/plagiarize.html>.

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. When

possible, the student should provide documentation of a requirement for accommodation to the instructor by the second week of classes. No accommodations are available to students who lack this documentation, and accommodations are not retroactive. 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.

Drop/Add/Withdrawal

A student can drop/add during the drop/add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an “E” (fail). **Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class does NOT constitute a drop.**

Course Evaluations

Anonymous course evaluations will be open via UF’s [online evaluations system](#) near the end of the semester; you will receive e>mail notifications of when the evaluations open. We do take student feedback into account when planning future semesters; please let your instructors know if there are particular modules and/or activities that you found helpful or that you would have liked to cover in more depth, as well as any that you found less useful.

Grades

Grading Scale

A = 90-100
B+ = 87-89.9
B = 80-86.9
C+ = 77-79.9
C = 70-76.9
D = 60-69.9
F = 59.9 and below

Grade Breakdown

Each lab is worth 10% of your grade.

Course Schedule

Weekly Schedule		
Week	Topic	Start Dates
1	Introduction to Biology Lab	August 21
2	Scientific Process & Statistics Part 1	August 28
3	Scientific Process & Statistics Part 2	September 4 (Labor day)
4	Enzyme Kinetics	September 11
5	Yeast Fermentation	September 18
6	Salamander Speciation	September 25
7	Inheritance - Week 1	October 2
8	Inheritance - Week 2	October 9
9	Cat Coat Genetics	October 16
10	Biotechnology Part 1	October 23
11	Biotechnology Part 2	October 30

Weekly Schedule

Week	Topic	Start Dates
12	Natural Selection	November 6 (Nov 10-Veterans Day)
13	Population Genetics	November 13
14	Thanksgiving Week (no lab)	November 20
15	Phylogenetics	November 27