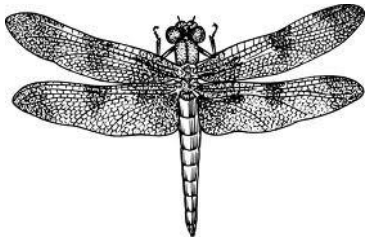

BIOL 1150-005 Lab
General Biology II Laboratory
"The Diversity of Life"
CSU Stanislaus, Fall 2013

Instructor: Dr. Ritin Bhaduri
Office Hours: Tuesday & Thursday 11 AM – 1 PM, N263, or by appointment
Email: rbhaduri@csustan.edu Please write "BIOL1150" in the subject line.

Course Description

BIOL 1150 is the second semester of the two-semester general biology sequence at CSU Stanislaus. The lecture and laboratory portions of the course must be taken at the same time- it is not possible to just take the lab or lecture, even if you have passed one or the other a previous semester. This course is designed specifically for biology majors, as well as other students who want a comprehensive introduction to biology. Biology majors and other students taking the two-course sequence (1050 and 1150) must get a C or better in 1050 in order to take 1150.

BIOL 1150 also serves as a G.E. course. For non-science majors, it is possible to take BIOL 1150 without first passing BIOL 1050. Because it is a prerequisite to the Biology major, however, BIOL 1150 is a content-heavy course that requires a substantial time commitment. For a GE course designed specifically for non-science majors, we recommend BIOL1010/1020.

The General Biology II laboratory is designed to provide students with laboratory and field experience with a focus on the **diversity of life**. We will explore many of the topics that are covered in lecture, but in lab we have the luxury of looking closely at examples of all of the major groups of living organisms on earth. A major goal of this course is for you to develop an appreciation of this diversity, and give you the tools to recognize, classify, and describe virtually all of the world's life.

Announcements: We will use Moodle as our learning management system. Create a Moodle account (code: biol1150005) and check for syllabus, quiz grades, etc.

iClickers: You will need to purchase/reuse/rent an iClicker remote. Register it on Moodle and at www.iclicker.com/support/registeryourclicker . Expect to use it every lab period.

Student Learning Objectives

After completing this course, you should be able to:

1. Recognize, identify, and classify the major groups of life on earth (i.e., recalling the scientific names of taxonomic groups at the Kingdom, Phylum, and/or Class level).
2. Describe the basic biology (internal and external features, ecology, and evolutionary history) of the major groups of life on earth.
3. Describe how technological advances, including microscopes and genetic sequencing, have expanded our understanding of the diversity of life on earth.
4. Proficiently use compound and dissection microscopes to examine cells, tissues, and organisms.
5. Create cladograms that describe hypothetical evolutionary relationships based on morphological characters of specimens.
6. Cooperate with other students to investigate and learn about the diversity of life.

Grading
Grades will be based on three practical exams, a biodiversity survey assignment and weekly attendance/participation/quizzes/lab write-ups. Your lab grade is worth 30% of your total grade for 1150.

Attendance/Participation/Quizzes/Writeups	100 pts. (10 points per lab)
Campus Biosurvey	70 pts.
~~Monterey Bay Aquarium Assignment~~	~~30 pts.~~ Replacement TBA
Lab Exam 1	20 pts.
Lab Exam 2	30 pts.
Lab exam 3	50 pts.
TOTAL	**300 pts.**

Quizzes/Participation

There will be 10 points per lab session covering quizzes. Questions will come from material in the lab workbook, **which you need to read ahead of time to be prepared for class**. Most of our class time will be spent applying the material that is in the lab manual, rather than going over the basic concepts (which you should read and study ahead of time). Pay particular attention to the "objectives" listed at the beginning of each exercise. Quizzes will begin promptly at the beginning of lab. If you are late you will have less time to complete your quiz. If you arrive after a quiz has been collected you will not be able to take that quiz. **There are no makeup quizzes; latecomers will receive a zero on the quiz.** The only exception to this is for a documented medical emergency. Provide your documentation, and you may make up the quiz.

At various times during lab I will randomly choose one or more groups to present their answers to questions from the day's lab assignment. In order to get credit for your presentation, you and your group members need to give a thorough explanation that answers the question. A simple, off-the-top-of-your-head answer will not get full credit. Often, the questions will come from questions at the end of each lab exercise. Lab questions often require thinking critically about the topic and making educated guesses. The answers will not always be obvious, and there may not be a "right answer." If you are still stuck after thinking about the question for a while, you SHOULD read up on the topic in Campbell. Your answers will be judged and graded based on completeness, originality, and level of critical thinking.

Lab Exams

Lab exams will cover "the diversity of life," including examples of the various organisms we examine in lab. There will be two types of questions: (1) questions that ask you to identify organisms and give their scientific and/or common names, and (2) short-answer questions about the organisms' ecology, morphology, and evolutionary history. The exams are not cumulative; each exam covers the new topics we have studied since the previous exam.

Campus Biosurvey

The campus biosurvey is a project to identify 35 different forms of life that occur on the CSU Stanislaus campus. You will be required to find, identify, and take photographs of a wide diversity of organisms. You will submit your photos, along with information on where and when you observed the organism, for credit. See the handout for more information.

Required Course Materials

1. **BIOL 1150 Lab Manual.** Available from the campus bookstore. Bring it with you to each lab- you will need it to follow along with the lab exercises and answer study questions. It is also handy for making notes and drawings during lab. Because the lab instructors wrote this manual from scratch, it is relatively inexpensive (<$20).
2. **Photographic Atlas for Biology Lab**. By Van De Graaff and Crawley, 6th Edition, Morton Publishing Company, ISBN 9780895828033. Available from the campus bookstore (~$30-$40 new). This book is extremely helpful when we are looking at specimens and performing dissections in class. Virtually every specimen and slide we examine in class is shown and labeled in this photo atlas. It will be your best guide as we examine the diversity of life. You can buy it new or used in the campus bookstore, or online, in bound, soft-cover format, or as loose-leaf, 3-hole punched pages. We recommend the loose pages so they can lay flat in your binder while you do dissections or examine specimens.
3. **Dissection Kit.** Available at the bookstore or at Nasco Lab Supply (4825 Stoddard Rd., Modesto). It should have a scalpel, forceps, a blunt probe, and micro-dissection scissors. A good kit should cost $10-15.
4. **Campbell's Biology.** Your lecture text book will be very helpful as you work on lab assignments and questions. It is recommended, although not required, that you bring it to lab.

Laboratory Policies

This course requires your presence in lab every week for the **entire lab period**. Because the laboratory setups change from class to class, it is **not possible to make-up missed laboratories**. Unexcused absences will result in no points for quizzes/participation. If you know you will miss a lab ahead of time, tell your lab instructor at least one week in advance- we may be able to arrange for you to attend a different lab section.

I have a no-tolerance policy for cheating and plagiarism. Students cheating on quizzes or exams or representing the work of others as their own will receive a zero for that assignment and will receive an F in the class. Even a quick glance at your neighbor's paper during a quiz is considered cheating, and subject to disciplinary action. As a student at this University, you should take great satisfaction and pride in knowing that the work you submit is completely your own.

You need to make productive use of lab time in order to make sure you finish all of the assignments and examine all of the specimens. **You should expect to spend the entire 2 hour and 50 minute class period working on lab each week.** If you finish your lab assignment early, you should take advantage of the extra time to study any specimens that are available. Identifying specimens requires developing keen observation skills, and an ability to recognize similarities amidst differences. These skills are only developed through practice.

BIOL 1150 Laboratory Schedule
(Numbered items refer to exercises in the lab manual)

Week of	
8/26	Introduction, Syllabus (1) History of life, (2) Biological classification HW: Complete Biology Safety Verification Test on Blackboard before next session
9/2	No labs this week
9/9	Quiz 1 (3) Microbes I, (4) Microscope review, (5) Bacteria Cells
9/16	Quiz 2 (6) Microbes II, (7) Protists
9/23	**Exam 1** (8) Fungi/Lichen, (9) Cladograms, (10) Intro to Plants
9/30	Quiz 3 (11) Bryophytes, (12) Pteridophytes, (13) Gymnosperms
10/7	Quiz 4 (14) Angiosperms, (15) Supermarket Botany
10/14	**Exam 2**
10/21	Quiz 5 (16) Animal Tissues, (17) Porifera, (18) Cnidaria
10/28	Quiz 6 (19) Platyhelminthes, (20) Annelida, (21) Mollusca
11/4	Quiz 7 (22) Nematoda, (23) Arthropoda
11/11	Quiz 8 (24) Echinodermata, (25) Chordata
11/18	Campus Biosurvey Assignment Due Quiz 9 (26) Frog dissection, (27) Animal adaptations **(Biosurvey Assignment Due)**
11/25	No labs this week
12/2	Quiz 10 (28) Ecology, Review
12/9	**Exam 3**