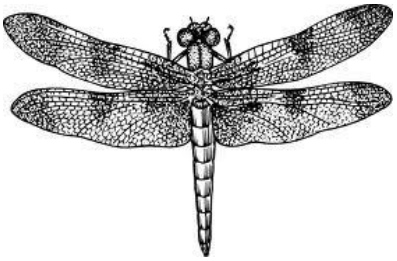

BIOL 1150 Lab
General Biology II Laboratory
"The Diversity of Life"
CSU Stanislaus, Spring 2016

Instructor: Erica Fleming
Email: efleming2@csustan.edu
Office Hours: N 255 Mondays 1-1:50, and Thursdays 2-4 or by appointment.
Blackboard: Access required for course documents and grades.
Email: Check your csustan email frequently.

Required Course Materials

1. **Exploring Biology in the Laboratory, CSU Stanislaus edition.** Authored by Pendarvis and Crawley, published by Morton. Available from the campus bookstore. Bring it with you to each lab. You will need it to follow along with the lab exercises and to answer study questions. It is also handy for making notes and drawings during lab. Each student will need her/his own manual.
2. **Dissection Kit.** Available at the campus 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 costs $10-15 and can be shared by a pair of students.
3. **Campbell's Biology.** Your lecture textbook will be very helpful as you work on lab assignments and questions. It is recommended that you bring the relevant chapters to lab.

Course Description

Introduction to the fundamental aspects of **organismal biology**: taxonomy, evolution, diversity, form and function, and ecology.

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 take the lab or lecture separately, 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 need a comprehensive introduction to biology. All students enrolled in BIOL 1150 must have received a C- or better in 1050; students without a C- or better grade will be dropped from the class. To receive credit for the one-year biology sequence, you must take *both* Biology 1050 and Biology 1150 at CSU Stanislaus, or transfer the complete, equivalent one-year *majors* series from another institution.

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 carrying out laboratory and field exercises that give you practice being a scientist. A major goal of this course is for you to develop an appreciation of the diversity of life, how this diversity came about (evolution), and how biota interact with their environment (ecology). Additionally, this lab will give you the tools to recognize, classify, and describe virtually all of the world's life, and to carry out independent investigations of organismal biology.

"The beginning of wisdom is calling things by their right names." (Chinese Proverb)

Student Learning Objectives
After completing this course, you should be able to:

1. Recognize, identify, and classify the major groups of life on earth, and understand how they are related to one another on the tree of life (phylogeny).
2. Describe the basic biology (life cycles, 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 or genetic characters of specimens.
6. Analyze and interpret biological data collected in the field and laboratory using statistics and graphs.
7. Cooperate with other students to investigate and learn about the diversity of life, ecology, and evolution.

Grades

Grades will be based on quizzes, exams, in-class activities, a biodiversity survey assignment, and a Monterey Bay Aquarium assignment. Your lab grade is worth ~1/3 of your total grade for the course. Your lab score will be submitted to your lecture instructor, who will combine your lab score to your lecture score and assign you a final grade for the class.

Quizzes	110 pts.
Insect Ecology project	25 pts.
Biosurvey	35 pts.
Monterey Bay Aquarium Assignment	30 pts.
Lab Exam 1	50 pts.
Lab Exam 2	50 pts.
TOTAL	**300 pts.**

<u>Quizzes</u>
Quizzes range in points (from 5 to 15 each) and begin promptly at the start of lab. Quizzes mainly cover material from the previous lab and also contain 1-2 review questions. Quizzes begin promptly at the start of lab. If you are late, you may have less time (or none) to complete the quiz. Once you begin a quiz, you may not leave the room and return to it. There are no make-ups except for dire emergencies which require documentation (doctor's note, tow truck receipt, jury duty summons).

<u>Lab Exams</u>

Two lab practical exams will cover lab material, 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.

Insect Ecology Project

As a class, we will carry out a research project comparing the insect communities from two locations on campus. You will work with your group to produce and analyze your data. You will also write a scientific report summarizing the study.

Biosurvey

The biosurvey is a project to observe, identify, and photograph different forms of life. 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. The Biosurvey will be due in class the week of May 2.

Field Trip to Monterey Bay Aquarium

On Saturday May 7th, from 7:45 am to 6 pm, we will travel by bus to the Monterey Bay Aquarium, arguably the finest marine aquarium in the world, where you will complete a stimulating assignment on marine biodiversity. This is a required trip and assignment. Make-ups require the same documentation as missed quizzes, and you must attend the aquarium on a different day, at your own expense, providing your own transportation. There are no alternative assignments to replace the 30 points.

Student athletes and DRS students

Please to notify me at the first lab meeting, or during my office hours.

Recording Lectures and Special Accommodations

Students with documented disabilities should seek special accommodations for all classes through the DRS office on campus. If DRS sends me a file on you that lists recording lectures as an acceptable accommodation, then you may record lectures. Otherwise, you have to do it the old-fashioned way with pen and paper. If you record lectures in any form (video, audio, still pictures, etc.) without accommodation from DRS, that constitutes intellectual property theft, will result in a zero in participation points, and preclude you from turning in any assignments related to the lab session.

Absences/Tardies

Attendance is required. Do not enroll in this class if you have conflicts or other commitments during your lab period. Every absence will result in one or more zero grades.

If you are late to class, or absent from class, you may not turn in your lab report from the previous lab. If you are late to class, or absent from class, you may not make up the quiz you missed. The only exception to this rule is in the case of illness or traffic emergency, and you must provide **documentation.** Documentation must be provided at the next office hour, which is also a good time to make up your quiz and turn in your lab assignment. **Do not wait until the next week during lab to begin this process. The opportunity to make up missed points will expire.** If you missed lab (with an excused absence) on a day where an assignment was issued, you must contact your lab partner in order to get your groups' data. Your assignment will be due at the same time as everyone else's. No extended deadlines, even in the case of excused absences.

Student Conduct

- Many labs will run the full three hours. Do not schedule appointments or accepts shifts at work that interfere with lab time. If you finish your lab assignment early, you should take advantage of the extra time to study the topics covered that day. Identifying specimens requires developing keen observation skills, and an ability to recognize similarities amidst differences. These skills are only developed through practice. Understanding and remembering the material we cover is a challenge for most students.
- Read the lab carefully before class to avoid mistakes that will require you to start over.
- Always contribute to your lab group.
- Practice lab safety at all times (no beverages or open-toed shoes).
- As a group, help each other with clean up. Each instance of not cleaning up will result in a deduction of 5 points for the group.
- Do not use cell phones, or other electronic devices during class. **After 2 requests, you will be dismissed from lab that day and any assignments pertaining to that lab session will not be graded.**

Tentative Schedule

Week #	Week of	Lab Activities
1	2/1	Deep Time, Study Skills
2	2/8	Evolution Chp 15, Classification Chp 16, start 18.3
3	2/15	Bacteria Chp 18
4	2/22	Protists Chp 19
5	2/29	Seedless plants Chps 20, 21
6	3/7	Seed plants Chps 22, 23, 24
7	3/14	Lab exam 1
8	3/21	Fungi Chp 25 and Tissues Chp 26
9	3/28	SPRING BREAK- No Class
10	4/4	Inverts 1 Chps 27, 28
11	4/11	Inverts 2 Chp 29, Insect Study
12	4/18	Deuterostomes Chp 30 INSECT STUDY DUE
13	4/25	Mammal dentition, Frog dissection Chp 30.4
14	5/2	Ecology Chp 37 BIOSURVEY DUE
	5/7	Monterey Bay Aquarium Field Trip Assignment Due at end of field trip
15	5/9	Lab exam 2
16	5/16	No Lab (Finals week starts 5/19)