

## Biology 10: Fundamentals of Biology Fall 2009

**Instructor:** Ms. Laurie Len

**Location:** NATS 127

**Meeting Times:** Tuesdays and Thursdays 6:00-8:55 pm

**Office Hours:** half an hour before class and by appointment

**Phone:** 310-660-3343 (leave message) **Email:** [lm1en@yahoo.com](mailto:lm1en@yahoo.com)

**Class Website:** [aris.mhhe.com](http://aris.mhhe.com)

- When prompted, use the course section code:
- To register for the class website, provide your email address. You will be prompted to provide a password (of your choosing).
- You will be asked for the course section code again:

**Textbook:** Essentials of the Living World by Johnson and Losos (2007)-optional

**Recommended:** Biology: Science for Life with Physiology (Belk and Maier-Borden, 2006). Also, e-book and supplementals available for \$30 at <https://register.pearsoncmg.com/reg/buy/buy1.jsp?productID=39321>

**Online Learning Companion:** [http://www.mhhe.com/biosci/esp/2001\\_gbio/requirements/default.htm](http://www.mhhe.com/biosci/esp/2001_gbio/requirements/default.htm)

**Textbook:** <http://www.pearsonsuccessnet.com/snapp/iText/products/0-13-115075-8/text/index.html>

**Lab Book:** Handouts will be provided in class

Please consider this a tentative schedule that may be altered. The reading assignment should be completed prior to the lecture and laboratory topic scheduled for that day. Read the appropriate laboratory chapter in your lab book **prior to your laboratory session!**

Date	Lecture Topic	Laboratory
09/01/09	*The Science of Biology,	Microscopy Part I
09/03/09	Chemistry I: Atoms, Bonds, Water, pH	Microscopy Part II
09/08/09	Chemistry II: Organic Chemistry, Carbohydrates, Proteins, Lipids, and Nucleic Acids	Chemical Composition of Cells
09/10/09	Cell Structure and Function	Cell Structure (concurrent with lecture)
09/15/09	Membrane Transport	<b>Lab Quiz #1</b> Cell Function (concurrent with lecture)
09/17/09	<b>Tidepool Walk at Cabrillo Aquarium</b> <b>Sunday, September 20: 3:30-5:00 pm</b>	
09/22/09	Cellular Respiration	Cell Respiration
09/24/09	Photosynthesis	Photosynthesis
09/29/09	*DNA Structure and Replication	<b>Lab Quiz #2</b>
10/01/09	Cell Division	Mitosis/Meiosis (Concurrent with Lecture)
10/06/09	Classical Genetics I: Intro, Monohybrid Cross,	Genetics (Concurrent with Lecture)

<b>Date</b>	<b>Lecture Topic</b>	<b>Laboratory</b>
	Dihybrid Cross	
10/08/09	Classical Genetics II: Beyond Mendel, Chromosomes	Blood Typing Lab
10/13/09	Pedigrees and DNA Fingerprinting	
10/15/09	Protein Synthesis	
10/20/09	Genetic Engineering	<b>Lab Quiz #3</b>
10/22/09	<b>Habitat Restoration at Madrona Marsh</b> <b>Saturday, October 24: 8:30 am-12 noon</b>	
10/27/09	*Origins of Life	Bacteria and Protista
10/29/09	Evidence for Evolution and Natural Selection	Evolution Lab
11/03/09	Populations	Fungi
11/05/09	Communities and Ecosystems	Plantae
11/10/09	Human Impacts on the Environment	<b>Lab Quiz #4</b>
11/12/09	<b>Pier to Pier 5K Run/Walk</b> <b>Saturday, November 14 at 7:00 am</b>	
11/17/09	*Tissues, Organs, and Organ Systems	Porifera and Cnidaria
11/19/09	Respiratory and Cardiovascular Systems	Platyhelminthes and Nematoda
11/24/09	Digestive and Excretory Systems	Mollusca and Annelida
11/26/09	<b>Thanksgiving Holiday—No Class</b>	
12/01/09	Immune Systems	<b>Lab Quiz #5</b>
12/03/09	Endocrine, Skeletal, and Muscular Systems	Arthropoda
12/08/09	Reproductive and Developmental Biology	Echinodermata and Chordata
12/10/09	<b>Restoration and Trail Maintenance at the 3 Sisters Reserve</b> <b>Saturday, December 12: 9 am-12 noon</b>	
12/15/09	Brain Structure and Function	<b>Lab Quiz #6</b>
12/17/09	<b>Semester Project Presentations</b>	

**Important Dates to Remember:**

Last day to drop for a full refund: Friday, September 11, 2009

Last day to drop without a notation on your permanent record: Friday, September 25, 2009

Last day to drop with a "W": Friday, November 20, 2009

**Course Purpose:**

This course is designed to acquaint students with the properties and processes of living organisms. Basic principles of structure, function, and relationships of living organisms will be explored, with a special emphasis on humans. Biology 10 is intended for non-biology majors.

**Learning Objectives:**

During this semester, we will focus on several essential ideas of biology. The focus of the class will be to learn the core concepts of biology while learning to think critically and to develop scientific literacy in order to make important decisions about biological issues.

In particular, we will address the following Student Learning Outcome: The student will understand and apply principles of the scientific method; recognizing an idea based on reproducible evidence.

- The Scientific Process and Properties of Living Organisms
- The Living Cell—Chemistry, Biochemistry, Cells, and Cell Energetics
- Genetics and Evolution
- Ecology
- Animal Structure and Function
- Plant Structure and Function

**Materials to Bring to Class:**

A pencil

A pen (blue or black ink)

\*Colored pencils

\*Calculator

**Lecture:**

Unlike other courses you may have taken, this biology class will be taught using an active learning approach. You will be responsible for reading and studying lecture material ahead of time using the online learning companion. You will take a **20 point Concept Quiz** over the previous lecture material. For this quiz, you will not be allowed to use any notes. The quiz will be given at the beginning of class, and you will be given approximately 15 minutes to finish. Because your three lowest concept quizzes will be dropped (to account for missed class due to unforeseen circumstances, illnesses, etc.), **no make-ups will be given for quizzes.**

Since you will have studied the material before coming to class, my lectures will be brief. We will spend the majority of time engaged in active learning activities such as group problem solving of critical thinking questions and simulations. Because your learning experience (and your group's) is highly dependent upon your preparation and participation, you will be given a participation assessment of approximately 25 points per unit (4 units x 25 points=100 points for the semester). Points will be distributed based on your active participation in discussions and active learning activities. Active learning groups will be changed at random after completion of each unit (see asterisks on lecture schedule).

There are no exams or final exam in this class. That being said, you will probably need to study MORE in this class than you might expect in order to keep up with the material. If you are unwilling or unable to set aside at least an hour or two of study time each day for this class (i.e., you are the type that likes to cram for a test with an all nighter), this class may not be the right one for you.

**Laboratory:**

The laboratory is designed to provide you with a hands-on experience with several lecture topics. You are required to attend your scheduled laboratory section. If you are absent on the day of a lab, you will be unable to receive credit for that lab. Under certain circumstances, I may allow one lab per semester to be made up for half credit. You must consult with me upon your return to see if you qualify to make-up the lab. Homework assignments associated with the lab sessions are due at the beginning of the class on the specified due date. Assignments are considered late if they are turned in after the concept quiz begins. Late assignments will receive half credit. You will also receive a laboratory participation score (50 points) which reflects your ability to leave your laboratory area clean, work cooperatively with your lab group, and your laboratory technique (use of equipment such as the microscope).

You will also have 6 lab quizzes over the semester. The material from these quizzes comes directly from the lab homework or any of the experiments and observations you made from labs. Lab quizzes typically cover about 4 to 5 laboratories. Scores will not be curved. From past experience, students typically struggle with lab quizzes because: one, they do not write down important information about what to study; two, they rush through the labs without taking enough time to observe and take notes; and three, they don't leave enough time to study! Please don't make these mistakes! Your lowest lab quiz score will be dropped.

**Semester Project:**

The semester project will be a photo essay based on your work as a volunteer on one of three approved programs: Palos Verdes Peninsula Land Conservancy; Madrona Marsh habitat restoration; South Coast Botanic Garden, You must provide documentation that you have served three times (for at least 2 hours each) over the semester. The project will culminate in a brief 5 minute PowerPoint presentation on your service learning activity. More detailed instructions will be distributed later.

**Field Trips:**

This semester, there are four field trips scheduled: a tidepool walk at the Cabrillo Aquarium; habitat restoration at Madrona Marsh; a 5K run; and habitat restoration for the Palos Verdes Peninsula Land Conservancy. Attendance at two of the four activities is mandatory, and appropriate time will be taken out of the schedule to account for your time outside of class at these activities. Laboratory will still be scheduled to start at our normal start time at 6:00 pm (unless other arrangements are announced in class).

**Extra Credit Opportunity:** Each field trip will be worth 20 points. If you attend three field trips, you will receive a bonus 15 extra credit points; if you attend all 4, you will receive 30 extra credit points.

**Academic Honesty:**

The official college policy on academic honesty will be strictly followed. Cheating/plagiarism includes copying information directly off the internet or reference books without making proper references; submitting identical answers to essay-style homework questions; and allowing other students to copy your homework assignments. Those caught cheating on quizzes or submitting another student's work as his/her own will receive a zero on the assignment and may be referred to the Dean's office.

**Attendance Policy:**

I will keep records of class attendance. Your attendance record will be examined in cases of poor

academic performance and/or borderline grades. A student may be dropped from the course when the number of hours absent exceeds the number of units for the course (see the El Camino College Catalog). Reading quizzes worth three points each will be administered at the very beginning of each lecture. If you are late, you will not be able to make up the quiz. It is worthwhile to be on time!

Some of the material included in exams and quizzes may not be found in the textbook. Additionally, introductory activities that count towards your participation grade given at the beginning of class may be missed if you are late. If you miss lecture material or announcements, it is up to you to get the information from another classmate. On some days, we may end class a little early, BUT DO NOT EXPECT TO GET OUT EARLY EVERY DAY! We have a lot to cover in a short amount of time, so be prepared to stay the entire length of class.

### Determination of Your Final Grade:

For Lecture:           23 concept quizzes of 20 points each for a total of 460 points  
                              4 participation scores of 25 points each for a total of 100 points  
                              Semester project for a total of 100 points  
                              **Total: 660**

For Lab:                25 labs of 10 points each for a total of 250 points  
                              5 lab quizzes of 20 points each for a total of 100 points  
                              2 Field Trips of 20 points each for a total of 40 points  
                              Laboratory participation for a total of 50 points  
                              **Total: 440**

For the entire course: lecture + lab = **1100 points**

These ranges are approximate. I RESERVE THE RIGHT TO ALTER THE POINTS POSSIBLE ON EXAMS AND/OR LABORATORIES AFTER VERBAL ANNOUNCEMENT TO THE CLASS.

A	=	990-1100 points
B	=	880-989 points
C	=	770-879 points
D	=	660-769 points
F	=	659 and below

### Assistance:

I am available to meet with students a half an hour before class to answer questions about lecture or laboratory topics. I also will respond to questions over email within 24 hours during the weekdays under most circumstances. If you are unable to meet with me during my scheduled office hours, please see me to schedule another time to meet. I want you to succeed!

Many students underestimate the time necessary to do well in this class. To be successful, you must read the assigned reading and laboratory exercises **before** coming to class. You may be surprised at how helpful the textbook can be! On the average, expect to spend at least one to two hours (or more) of study time per day (not just on Tuesdays and Thursdays) in order to keep up with the material. In the past, students who have done well study nearly every day.

I strongly encourage you to get the name, phone number and email address of at least two of your classmates. They can pick up handouts for you if you are absent and you can form study groups as well. I can provide study group material for you to go over if you give me a day or two notice.

**Classmate Contact Information:**

Name: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

Name: \_\_\_\_\_  
Phone: \_\_\_\_\_  
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