

EL CAMINO COLLEGE
FALL SEMESTER 2009
BIOLOGY 101 —Principles of Biology I

Mission Statement for El Camino College

El Camino College offers quality, comprehensive educational programs and services to ensure the educational success of students from our diverse community.

Course Section: 1110

Course Units: 5; Transfer Eligibility for CSU, UC

Students must be enrolled and must regularly attend both lecture and laboratory components in order to earn credits and a grade for this course.

Course Lecture Time: Mon – Wed 12:00PM -- 1:25 PM Bldg-Room: LS-108
Course Laboratory Time: Tue – Thu 2:00 PM – 5:10 PM Bldg-Room: LS-105

Instructor: Mr. Bryan Carey

Office Location: NATS 114 (shared office w/ Dr. T. Palos)

Office Phone: 310-660-3593 x 3357; **Office Hours:** M-W 1:30- 3 PM; Tu 10:30 - 11:30 AM

e-mail: my account at El Camino College is bcarey@elcamino.edu

Course Description: This course focuses on eukaryotic organisms in their evolutionary and ecological context. The student will have a thorough exposure to plant and animal anatomy and physiology, and will utilize animal dissection in the lab. Students will be expected to complete a project that includes hypothesis, prediction, experimentation, and presentation of results. This course is one of three courses in the biology series designed for majors, including those with interest in pursuing a career in medicine, dentistry, or other life sciences.

Course Prerequisites:

Chemistry 4 with a minimum of C grade or better. Additional recommended preparation includes English 1A. The course is transfer eligible and degree applicable. It is also recommended that Chemistry 1A be taken at the same time as this course to be prepared for Biology 102.

Course Materials:

Textbook: Biology. 8th edition. Authors: Raven, Johnson, Losos, Mason, and Singer.

Copyright 2008. ISBN 978-0-07-296581-0

Laboratory Manual: Biology Laboratory Manual. 8th edition. Authors: Vodopich and Moore.

Copyright 2008. ISBN 978-0-07-299522-0

Other required materials

I will provide other supplemental materials throughout the semester. Therefore, you may want to bring a 3-ring binder to collect and organize the paperwork I give you throughout the semester.

Use a bound notebook (plain or quadrille), color pencils, goggles, and a hair tie for long hair when working with chemicals, bunsen burners, etc. You will also need to provide me with scantrons for exams-the small one is 815-E, with 15 questions on one side; the large one is 882-E, with 50 on a side (100 total questions). Bring #2 pencils with your for quizzes and exams.

Course Objectives

Goal 1) To gain a comprehensive understanding of basic ecological & evolutionary principles.

The student will be able to:

- a. Characterize interactions among organisms and between organisms and environment.
- b. Discriminate among population dynamics, community structure, and ecosystem functions.
- c. Outline major events in the evolutionary history of life.
- d. Explain the principles and mechanisms of evolution at the micro and macro levels.

Goal 2) To survey the protist, fungal, plant and animal kingdoms within Domain Eukarya.

The student will be able to

- a. Compare & contrast representative protist phyla.
- b. Compare & contrast the life cycles of fungal phyla.
- c. Compare & contrast major plant groups.
- d. Compare & contrast major animal groups.
- e. Recognize the various protist, fungal, plant, and animal phyla examined in lab.

Goal 3) To gain a basic understanding of plant biology.

The student will be able to

- a. Diagram & explain the alternation of generations in plant lifecycles.
- b. Identify samples of flower, fruit, and seed types.
- c. Describe the various plant tissues and organs.
- d. Explain water and food transport in plants.
- e. Discuss the role of phytohormones in plant growth.

Goal 4) To gain a basic understanding of animal biology.

- a. Identify and describe animal structures.
 - i. Distinguish the four basic tissue types of vertebrate animals.
 - ii. Describe the key elements of animal organ systems.
- b. Relate animal structures to functions.

Goal 5) To develop a basic understanding of the scientific method and gain an appreciation for several laboratory techniques.

The student will be able to:

- a. Utilize a compound microscope.
- b. Carry out various animal dissections.
- c. Apply the scientific method in developing and executing an experimental project.
- d. Present data and articulate an understanding of what the data means in a written format.

Student Learning Outcomes

The student will be able to use the compound and dissecting microscope to observe cells and microorganisms.

Evaluation Criteria: Lab exercises, lecture and lab quizzes, exams, and other analyses of student learning will be comprised of multiple choice, True/False, completion, and graph interpretation.

Class Policies

Safety and Courtesy Considerations:

No eating, drinking, smoking, applying cosmetics, changing contact lenses, or similar activities are allowed. Only a bottled water container with a screw-on cap is allowed in class, and you should drink it outside if I give a short break.

Cell phones, iPods, MP3's, iPhones, pagers, etc. **must be turned off, or on silent mode.**

There are consequences for cell phones going off during class, including the option of deducting points from quiz scores for repeat offenses (phone going off twice during semester). I will also confiscate the phone until the end of class, at which time you will receive back your phone.

The various distractions from the above activities impair your ability to learn and your instructor's ability to teach in the classroom and laboratory. Please be considerate and be courteous to yourself, your classmates, and your instructor during this semester.

Health and Medical Issues

This is for students with special health or disability concerns. Please contact DSPS for help throughout the semester. Also, please let me know of any medical situation (heart condition, allergies, eye problems) and any way I can help facilitate your learning of material in the class environment.

Course Grading

Exams and other activities:	Each	Total for each section
5 Lecture Quizzes	15 (drop 1 lowest)	60
5 Lecture Exams	100 (drop lowest score)	400
2 Website Assignments	10	20
2 Film Notes Pages	5	10
	Lecture Points Subtotal	490
15 Laboratory Notebook & Worksheets	5 (15 weeks of labs)	75
10 Laboratory Quizzes	10 (10 taken, drop 2 lowest)	80
1 Project/Poster Presentation	35	35
4 Lab Exams	100	400
	Laboratory Points Subtotal	590

CLASS POINTS TOTAL APPROXIMATELY= 1080

Grading Breakdown:

90-100% = A (972-1080) 80-89% = B (864-971) 70-79% = C (756 -839)

60%-69% = D (648-755) Under 60% = F (below 648)

Poor attendance will reduce your ability to learn material, and will likely affect your grade!

I am allowed to drop students after missing 5 class periods. Being consistently tardy (3 times) adds up to one absence as well. Do your best to attend every lecture and lab section.

No make-up times for major lecture or lab exam unless a major health incident occurs, with proof of a physician's note.

Academic Honesty:

To follow the guidelines of the Natural Sciences Division and El Camino College in general, each student needs to complete his or her own work. This means that no incidences of cheating, plagiarizing, or otherwise providing unfair advantage to complete course assignments are tolerated. You will be given a zero (0) for the assignment, a report to the Dean's Office, and other possible disciplinary consequences. **DO NOT CHEAT OR PLAGIARIZE!** In the long run, doing your own work to the best of your ability will pay off.

Helpful resources and suggestions for success in Biology 101:

Follow what I take time to emphasize in lecture through a variety of instruction formats. Use the textbook and associated text resources (on-line/cd/dvd) to reiterate and test yourself. Look at important images, graphs, and captions in the text chapters.

Make notes of your notes to reinforce what you understood, as well as any content that wasn't clear or was misunderstood.

I recommend coming to me at least once during the semester during office hours. Also, get into groups for review sessions. Utilize the many resources available to you at the Learning Resources Center. The link is included below:

<http://www.elcamino.edu/library/lrc/index.asp>

Tentative Schedule for Biology 101 – Fall 2009

This schedule may change during the semester.
Be aware as topics and/or exam dates may be altered!

Lecture Activities

Topic	Week	Chapter(s)	Comments/Notes
Origins and History of Life & Microevolution	Aug 31-Sep 4	Ch 26, 20	
Labor Day Holiday/ Macroevolution & Speciation	Sep 7-Sep 11	Ch 21, 22	
Systematics and Phylogenetics	Sep 14-Sep 18	Ch 23	
Exam I ; Ecology of Communities	Sep 21-Sep 25	Ch 56	
Ecology of Ecosystems & Biosphere	Sep 28-Oct 2	Ch 57 58 & 59	
Protists/Fungi	Oct 5- Oct 9	Ch 29, 31	
Exam II , Lower Plants	Oct 12-Oct 16	Ch 30	
Gymnosperms/Angiosperms	Oct 19-Oct 23	Ch 30, 37, & 42	
Angiosperms/ Tissues, Organs, and Transport	Oct 26-Oct 30	Ch 36, 38	
Plant Form, Growth, & Development;	Nov 2-Nov 6	Ch 39, 41	
Exam III , Animal Diversity	Nov-9-Nov 13	Ch 32 and 43	
Nervous System, Sensory & Endocrine	Nov 16-Nov 20	Ch 44, 45, & 46	
Musculoskeletal	Nov 23-Nov 27	Ch 47	
Circulatory/Respiratory/ Exam IV	Nov 30- Dec 4	Ch 49	
Immune/Reproduction & Development	Dec 7-Dec 11	Ch 48, 50, 51	
FINALS WEEK	Dec 14-Dec 18	M 9 AM meeting in classroom	

Laboratory Activities

Topic	Week	Quiz	Worksheet Check	Notes
Metrics & Microscope	1 Aug 31-Sep 4		Exercises 2 & 3	
The Process of Science	2 Sep 7-Sep 11	X	Exercise 1	
Ecology Lecture- Populations; Community Succession	3 Sep 14-Sep 18		Read Ch 55; Exercise 21	
Population Growth; Pollution, Heat Effects	4 Sep 21-Sep 25	X	Exercises 22, 23	
Survey of Kingdom Protista: Algae, Protozoa	5 Sep 28-Oct 2	X	Exercises 25, 26	
Survey of Kingdom Fungi	6 Oct 5- Oct 9	X	Exercise 27	
Survey of Kingdom Plantae--Part I & II	7 Oct 12-Oct 16	X	Exercises 28, 29	
Lab Exam I; Plantae—Part III & IV	8 Oct 19-Oct 23	X	Exercises 30, 31	
Plantae-- Plant Anatomy	9 Oct 26-Oct 30		Exercise 32	
Plant Anatomy and Physiology	10 Nov 2-Nov 6	X	Exercises 32, 33	
Lab Exam II; Vertebrate Animal Tissues	11 Nov-9-Nov 13	X	Exercise 41	
Survey of Animal Kingdom-Part I & II;	12 Nov 16-Nov 20		Exercises 36, 37	
Survey of Animal Kingdom-Part III & IV; Thanksgiving Holiday	13 Nov 23-Nov 27	X	Exercises 38, 39	
Lab Exam III; Survey of Animal Kingdom Part V	14 Nov 30-Dec 4	X	Exercise 40	
Reproduction/Development Lecture;	15 Dec 7-Dec 11		Ch 52, 53	
Lab Exam IV Last Week	16 Dec 14-Dec 18		Thurs Lab meeting	

Please follow the guidelines. Don't hesitate to ask me for help. Go to the Student Success Centers on campus for additional help. Ask questions during class, outside of class in an office hour type of meeting, or by communication on the internet. This is a learning process for me as well as you, and I will be more effective as an instructor with interaction and input from you.

My task is to help you to learn, and to encourage you to be open to the many different facets of biological science. Learning about the diversity of organisms and their respective roles in the environment is an important part of not only a scientific discipline or a means to a career, but an every day aspect of life for all organisms. You are entitled to all the resources that El Camino College offers to assist you.

Be sure to capitalize on this opportunity. Build your study skills. Develop critical and creative thinking. Be an ambassador to others around you regarding the value of having scientific knowledge (such as from the Biology 101 course) when interacting with people in other scenarios of your life.

Part I

This is an informal questionnaire to find out what your goals from this class are, what your study habits are, and how you learn. Please hand these last two pages to me by the end of Week 1.

Please write in/circle your answers where appropriate.

1. Why are you taking Biology 101—Principles of Biology I?
a. requirement only b. interest in science c. other _____
2. What do you hope to get out of Biology 101?
a. a C or better b. some idea of how our world works, how we function as living organisms
c. I have to get an A d. I want to understand more about my health and my environment
3. Do you have access to a computer and means of playing cds and dvds Y or N? _____
4. Do you understand how to read information from (and the parts) of a graph or data table? Y or N? _____
5. For this next question, do not circle an answer choice, but just reflect on your situation. Then follow the directions below.

Which situation or situations best fit your lifestyle and amount of focused study time?

- I) I'm 19, live at home, and have 20-30 hours per week to study
- II) I'm 29, married and/or have kids, a full-time job, and less than 15 hours of real study time
- III) I'm 24, and have a part-time job, and have about 15-20 hours per week to study
- IV) I'm over 30, have at least part-time employment, family, and am taking 1-2 classes per semester, and have about 10 hours of free time to study.

Considering the above possible lifestyles (or something similar to them), imagine how things can get in the way of being a student...sick children, broken down car or other vehicle, a last-minute schedule change at work, a major report or other deadline for your work, etc.

What would you do to maintain a minimum level of good study habits to get through Bio 101 or any other courses you take?

List at least 3 solutions for your potential situation.

6. How do you deal with learning new concepts, terms, and other topics such as you might learn in a science class? Circle one or more that apply to you.
a. skim lab manual or lecture book once right before class
b. make notes, repeat terms, make flash cards, check textbook glossary, figures, and captions
c. read at least 3 times each week, ask teacher or classmates for help, go to campus tutoring service
d. give up after one try or one read, and move on to the next topic
7. What method(s) work best for you to learn? Circle all that apply to you.
a. I memorize everything
b. I read the text, then calculate/observe/manipulate items (for example, lab exercises) to analyze and achieve understanding of the topic
c. I look at sample problems and try to practice them
d. I listen to what the instructor says
e. I make notes from the textbook, and then study the areas that are emphasized by the instructor during lecture/lab

List any other method(s) you use that I have not listed above

Part II

Biology 101---Principles of Biology I--Fall 2009

Please write in/circle your answers where appropriate.

Here are some questions/bits of scientific info that you may or may not know at the start of this class, but hopefully you will have some idea of by the end of the class!

1. What is DNA? What is it made of? What do the three letters stand for? _____

2. The cell is the basic unit of life—True or False? _____

3. An atom has several parts to it that make each element unique. **Circle the three major parts.**

a. proton b. neutron c. boron d. electron e. fluon

4. Water has unique properties which may have given rise to life on this planet. List three properties.

5. Plants are the only organisms that can change light energy into biologically-active chemical energy. True or False?_____

6. Birds and mammals (such as humans) are the most species-rich organisms on the planet. True or False?_____

7. Which elements are important to life? Circle all that you think apply.

a. hydrogen b. oxygen c. nitrogen d. carbon e. phosphorous f. sulfur

8. What is a hypothesis, and how is it different from a theory, such as the Theory of Gravity or the Theory of Evolution? _____

9. Please rank in order of increasing reliability (1 highest, 5 lowest) what you think of the following information sources regarding a science topic...which would you trust to be the most accurate/correct?

a. what you overhear in a conversation about West NileVirus while at a sports event #_____

b. what you read in a popular press publication like People Magazine #_____

c. what you see on a blog about diets and “carbs” #_____

d. what you read in peer-reviewed publication like Nature or New England Journal of Medicine #_____

e. what you hear on the media (*i.e.* NBC Nightly News) about a study performed by some industry, company, or government agency that may impact or set a scientific-related policy #_____

10. Put a check or X by five different resources that you , as an El Camino College student, are entitled to in order to be successful at El Camino College, in your Biology 101 course, or any other course you take. Here is the list of possible resources:

a. individual or group tutor assistance form the Learning Resource Center _____

b. your athletic team coach will do your homework _____

c. your biology instructor will give you all the answers to your exams before you take them _____

d. office hours with your instructor _____

e. contact by e-mail with your biology instructor _____

f. Shauerman Library (main library at ECC)_____

g. copying your classmate’s worksheet answers right before lab starts _____

h. informal study groups with classmates the weekend before a big lecture exam _____