

# Biological Principles I

BIOL 106

Spring 2016

Tuesday and Thursday 8am – 9:15

Chaparral 5125

## **Dr. Casey terHorst**

Office: Chaparral 5316

Office Phone: 818-677-3352

Office Hours: Tues, 9:30-10; Wed, 1-2pm.

Email is the best way to contact me: [casey.terhorst@csun.edu](mailto:casey.terhorst@csun.edu)

## **Course Description:**

BIOL 106 is one of two introductory biology courses intended to cover the fundamental principles of biology. Topics in BIOL 106 include: biodiversity, the Tree of Life and phylogenetic thinking, the scientific process, heredity, evolution, ecology, animal behavior, and conservation. This course is required for all students majoring in Biology, but it is also suitable for students in chemistry (biochemistry option). The course also serves students who need entrance requirements for health-related programs, such as medical, dental, veterinary, pharmacy, and nursing schools.

## **Course Objectives:**

This course is designed to teach ecological and evolutionary concepts related to:

1. Understanding the Tree of Life
2. Biodiversity, using a phylogenetic approach
3. Using the scientific method for solving problems
4. Mechanisms of inheritance and the roles that genes play in living organisms
5. Evolutionary mechanisms: mutation, migration, selection, drift, non-random mating
6. Consequences of interactions between organisms and their environment
7. Life-cycles and mating systems of animals, plants, fungi, and microbes

## **Required Materials:**

### iPad:

This class requires each student to have an iPad. You will work on many in-class activities using the iPad throughout the semester. This will involve using apps that may not be available on other tablets. For activities and exams that count as points towards participation/graded assignments, you will not be able to get full credit for the course if your device does not support a particular app. You should upgrade to iOS 9 to ensure that all apps function properly on your iPad.

### MindTap and e-Book

To offset the cost of the iPad to students, the Biology Department is using e-books, when possible. For this class, we will use:

Biology: The Dynamic Science, 3<sup>rd</sup> edition. Authors: Peter J. Russell, Paul E. Hertz, Beverly McMillan

The e-text and access to MindTap should be purchased directly from the publisher for \$55. Details for how to do so are available on Moodle. The publisher's price for these is much less than the hard-bound book that was required in the past. That means that in just BIOL 106/107/322/360/380 (all required for biology majors), the savings will be at least \$500, recovering the cost of the iPad.

### **Course Website**

We will make heavy use of the course Moodle site, for uploading assignments, taking quizzes, downloading materials, and watching lectures. Be sure to familiarize yourself with the Moodle site, and check it regularly as the schedule is likely to change. Consult the schedule for readings from the textbook. You can also use the Moodle site for social networking with other students in the class.

### **Course Evaluation**

Your course grade is based on:

- (1) Exams: 60%
- (2) Aplia Assignments: 10%
- (3) Quizzes: 15%
- (4) In-Class Assignments: 15%

If you choose to participate in PLF sessions (see below), these will account for 5% of your grade, making your exams worth only 55%.

#### (1) Exams

Four exams will be based on lecture, textbook readings and materials posted in Moodle. No make-up exams will be offered unless you obtain permission prior to the exam date. Exams will consist of multiple choice and short answer questions. Exams may include questions from the readings that were not covered in lecture. Exams are focused on the most recent material, except for the final, which is cumulative. Exams will be taken on the iPad.

#### (2) Aplia Assignments

Each week, I will assign Aplia homeworks that will be completed on-line through MindTap. The homework will be due on Monday by midnight each week.

#### (3) Quizzes

Quizzes will be given on the iPad at the beginning of class. You must be on time to take the quiz. Your lowest quiz score will be dropped.

#### (4) In-Class Assignments

In-class assignments that are missed will receive a grade of 0. You may miss two days of in-class assignment without penalty.

### **Peer Learning Facilitation (PLF)**

One hour per week study sessions directed by students here at CSUN will be offered to help students be successful in this class. PLF sessions will be graded primarily based on

attendance (90%) and participation (10%). Sessions will help students to identify important concepts and understand difficult materials as well as provide helpful study skills and review materials for learning. Different PLF sessions are available on a first come, first serve basis. Missed sessions will receive a grade of 0 for that day. You may miss two PLF sessions without penalty.

PLF sessions are optional, but highly recommended. If you are repeating this course, then the PLF sessions are REQUIRED. Sessions will be led by Reinard Villalon (reinard.villalon.856@my.csun.edu) and Alexander Parker (alexander.parker.724@my.csun.edu). If you wish to participate, you must pick one of the following sessions on Moodle and always attend that particular session:

Reinard:

Wednesday 5-6pm (CR 5430)

Thursday 3:30-4:30pm (CR 5330)

Friday 10-11am (CR 5330)

Alexander:

Monday 5-6pm (CR 5430)

Tuesday 12-1pm (CR 5430)

Tuesday 2-3pm (CR 5430)

Final Grades will be determined on a percentage basis depending on the number of total points EARNED.

A	92 - 100%
A-	90 - 92.9%
B+	87 - 89.9%
B	83 - 86.9%
B-	80 - 82.9%
C+	77 - 79.9%
C	73 - 76.9%
C-	70 - 72.9%
D+	67 - 69.9%
D	63 - 66.9%
D-	60 - 62.9%
F	< 60%

### **Biology Department Withdrawal Policy:**

Unrestricted withdrawals are permitted only until the end of the third week. Thereafter, requests to drop a class will be honored only when a verifiable serious and compelling reason exists and when there is no viable alternative to withdrawal. Poor performance is NOT an acceptable reason for withdrawal. During the last three weeks of the semester, withdrawals will not be approved except when a student is withdrawing from ALL classes for verifiable medical reasons. Incomplete grades will not be given for missing exams or assignments that cannot be accomplished by the student INDEPENDENTLY.

### **University Policy on Cheating:**

The maintenance of academic integrity and quality education is the responsibility of each student within this university and the California State University system. Cheating or plagiarism in connection with an academic program at a campus is listed in Section 41301, Title V, California Code of Regulations, as an offense for which a student may be

expelled, suspended, or given a less severe disciplinary sanction. Academic dishonesty is an especially serious offense and diminishes the quality of scholarship and defrauds those who depend upon the integrity of the campus programs. Such dishonesty includes:

**A. CHEATING**

Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.

**B. FABRICATION**

Intentional falsification or invention of any information or citation in an academic exercise.

**C. FACILITATING ACADEMIC DISHONESTY**

Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

**D. PLAGIARISM**

Intentionally or knowingly representing the words, ideas, or work of another as one's own in any academic exercise.

I will not tolerate cheating. If you are caught cheating, you will receive an automatic failure on the exam or assignment. Please come ask me for help before resorting to such short-sighted and ill-advised actions.

**Students with Disabilities:**

If you have a disability and need accommodations, please register with the Disability Resources and Educational Services (DRES) office or the National Center on Deafness (NCOD). The DRES office is located in Bayramian Hall, room 110 and can be reached at 818.677.2684. NCOD is located on Bertrand Street in Jeanne Chisholm Hall and can be reached at 818.677.2611. If you would like to discuss your need for accommodations with me, please contact me to set up an appointment.

**Final Thoughts:**

I am here to help you learn and understand some of the principles of biology.

You are here to learn. This isn't an easy course. You will have to study and play an active role in your own learning to keep up. I will do everything in my power to get you the information you need to do well in this course. If something isn't clear, ask questions. You will do well in this class if you come to lectures and participate, do the reading, and spend additional time going over your notes. But you should think of this class like going to the gym. You can't just show up and expect to get fit. You need to actively engage with the subject matter.

<b>Date</b>	<b>Topic</b>	<b>Reading</b>
1/26	Introduction; Thinking about trees	Ch. 24
1/28	Overview of the Tree of Life	Ch. 25
2/4	Prokaryotes	Ch. 26
2/9	Meiosis and Mitosis, Algae	Ch. 11, 27
2/11	Plants	Ch. 28, 29
2/16	<b>EXAM I</b>	
2/18	Fungi, Protozoa, and Animals	Ch. 27, 30
2/22	Protostomes	Ch. 31
2/25	Deuterostomes	Ch. 32
3/1	Primates and Humans	Ch. 32
3/3	Darwin and Evolutionary Evidence	Ch. 23
3/8	H-W Equilibrium	Ch. 21
3/10	Evolutionary Processes	Ch. 21
3/15	<b>EXAM 2</b>	
3/17	NO CLASS	
3/21-3/27	SPRING BREAK	
3/22	Natural Selection	Ch. 20
3/24	Natural Selection	Ch. 20
3/29	Sexual and Kin Selection	Ch. 20
3/31	NO CLASS: Cesar Chavez Day	
4/5	Genetic Drift	Ch. 21
4/7	Gene Flow	Ch. 21
4/12	Speciation and Macroevolution	Ch. 22
4/14	<b>EXAM 3</b>	
4/19	Distributions and Abundances	Ch. 51
4/21	Population Growth and Regulation	Ch. 52
4/26	Density-Dependence	Ch. 52
4/28	Life History Theory	
4/28	Behavioral Ecology	Ch. 56
5/3	Competition, Predation, Herbivory	Ch. 53
5/5	Mutualisms and Facilitation	Ch. 53
5/10	Community Ecology	Ch. 54
5/12	Global Change	Ch. 55
5/19	<b>FINAL EXAM</b>	