

Grade 10, 11 or 12

[UC] [CSU]

Course Description

Advanced Placement is a weighted college level course which includes an exam in May covering the full year of course work. This course fulfills one year towards the science requirement for graduation. It also meets the UC A-G requirements.

The four big ideas, as shown below, are stressed throughout the course.

1. The process of evolution drives the diversity and unity of life.
2. Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis
3. Living systems store, retrieve, transmit and respond to information essential to life processes.
4. Biological systems interact, and these systems and their interactions possess complex properties.

Prerequisites

Minimum of one year of advanced biology with a grade of C or better highly recommended.

Minimum of one year of chemistry with a grade of C or better highly recommended.

Course Objectives

- Understand the science practices used in biology and other sciences
- Identify and relate the Big Ideas in biology through enduring understandings
- Practice finding and using patterns in collected data to solve scientific problems
- Apply biological theory and research findings to explain and discuss everyday phenomena and ethical questions
- Apply biological knowledge and critical thinking to environmental and social concerns
- Develop an ability to design laboratory investigations that incorporate the Big Ideas and science practices important to understanding biology
- To prepare for the AP Exam

Method of Instruction

Lecture: Students are expected to actively participate in group discussions and activities, which take place during lectures.

Laboratories: These are designed to supplement the lecture. Each unit will have one or more corresponding lab activities. It is impossible to make up some laboratory activities.

A calendar of pacing, lectures, assignments, and exam dates will be available prior to the beginning of the unit on the instructor's web page. Audiovisual materials and guest speakers will be presented to emphasize certain subject matter.

Examination material will be taken from topics covered in lecture, as well as textbook chapters, laboratories, classroom activities, and homework. The recommended minimum study time for quizzes is 45 minutes and 60 minutes for a chapter test. The best way to prepare for exams is to stay current with new material. This means that the student reads the sections from the book, reviews their lecture notes, understand the lab materials, and comprehends homework answers. All of this should be done in advance of the night before the exam!

Student Support Plan

A. Before instruction

- * Unit calendar to include: unit objectives, homework assignments, laboratory activities, quizzes, and exam schedule.
- * Students have access to classroom facility before school to work on homework individually, or in groups
- * Ongoing instructor assessment and revision of all curricula (all materials are on the instructor's web page)
- * Homework assignments are aligned with the lectures, and textbook. See online support materials, *Mastering Biology*

B. During instruction

- * Assessment of student understanding through: regular chapter quizzes based on daily activities such as homework assignments, assigned text reading, lab activities, and lecture notes index card review (individual student response), special strategies for note taking, and pre-lab assessment (teacher approval)
- * Use of technology for student presentations, data analysis, and lectures
- * Peer group activities and peer assessment
- * Instructor models organizational skills that students incorporate into their daily classroom activities

C. After assessments

- * Regular parent contacts to encourage academic performance, punctuality, and attendance
- * All assignments will be graded and returned within a 24-48 hour period (some exceptions may apply)
- * Grades are posted in a timely fashion for student and parent information
- * Students will be recognized, and rewarded for academic performance

Scholarship Grading Policy

Quizzes, labs, and homework are graded on a point system. A student's total points are divided by the total points possible in the course and converted to a percentage.

<u>GRADING SCALE</u>	<u>Homework /Class Work</u>	<u>17%</u>
A 86 - 100%	Labs and Laboratory Write-ups	30%
B 80 - 85%	Tests and Quizzes	43%
C 70 - 79%	Final Exam	10%
D 55 - 69%		
F < 54%		

Pacing Guide

Quarterly Schedule - See instructor's web page for unit calendar with all due dates.

<u>Quarter</u>	<u>Curriculum</u>	
1st	Unit 1	Intro. To Biology and Chemistry
	Unit 2	The Cell
2nd	Unit 3	Metabolism
	Unit 4 and 5	The Cell Cycle and Genetics,
3rd	Unit 6 and 7	DNA, Protein Synthesis and Gene Expression
	Unit 8 and 9	Evolution, and Bacteria, Protists & Fungi
4th	Unit 10	Plant Life
	Unit 11 and 12	Animal and Ecology