

**Carmel High School
Science Department
AP Biology, Room 34
Mr. Dooner
2019- 2020**

Advanced Placement Biology

UC/CSU:	Fulfills D- Life Science requirement or G- Elective requirement
Grades:	11-12
Credits:	10 w/weighted GPA
Est. Daily Homework:	60 minutes
Prerequisites:	Successful completion of Biology and Chemistry

Course Description:

The AP Biology course is equivalent to a two semester college introductory Biology course. The key concepts and related content that define the course and exam are organized around a few underlying principles called the Big Ideas, which encompass the core scientific principles, theories, and processes governing living organisms and biological systems. For each of the Big Ideas, enduring understandings, which incorporate the core concepts that students should retain from the learning experience, are also identified below:

Big Idea 1: The process of evolution drives the diversity and unity of life.

Enduring Understandings:

Change in the genetic makeup of a population over time is evolution.

Organisms are linked by lines of descent from common ancestry.

Life continues to evolve within a changing environment.

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.

Enduring Understandings:

Growth, reproduction and maintenance of the organization of living systems require free energy and matter.

Growth, reproduction and dynamic homeostasis require that cells create and maintain internal environments that are different from their external environments.

Organisms use feedback mechanisms to regulate growth and reproduction, and to maintain dynamic homeostasis.

Growth and dynamic homeostasis of a biological system are influenced by changes in the system's environment.

Many biological processes involved in growth, reproduction and dynamic homeostasis include temporal regulation and coordination.

Big Idea 3: Living systems store, retrieve, transmit, and respond to information essential to life processes.

Enduring Understandings:

Heritable information provides for continuity of life.

Expression of genetic information involves cellular and molecular mechanisms.

The processing of genetic information is imperfect and is a source of genetic variation.

Cells communicate by generating, transmitting, and receiving chemical signals.

Transmission of information results in changes within and between biological systems.

Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties.

Enduring Understandings:

Interactions within biological systems lead to complex properties.

Competition and cooperation are important aspects of biological systems.

Naturally occurring diversity among and between components within biological systems affects interactions with the environment.

SCIENCE PRACTICES:

Throughout the course, laboratory investigation and inquiries and classroom activities and assignments will afford the students the opportunity to develop the following science practices:

Science Practice 1: *Concept Explanation*- Explain biological concepts, processes, and models presented in written format.

Science Practice 2: *Visual Explanation*- Analyze visual representations of biological concepts and processes.

Science Practice 3: *Questions and Methods*- Determine scientific questions and methods.

Science Practice 4: *Representing and Describing Data*- Represent and describe data.

Science Practice 5: *Statistical Tests and Data Analysis*- Perform statistical tests and mathematical calculations to analyze and interpret data.

Science Practice 6: *Argumentation*- Develop and justify scientific arguments using evidence

Course Content:

UNIT ONE: Chemistry of Life

Chapters 1, 2, and 3

4 weeks

UNIT TWO: Cell Structure and Function

Chapters 4, 5.1- 5.5, 25.1

4 weeks

UNIT THREE: Cellular Energetics

Chapters 6, 7, and 8

4 weeks

UNIT FOUR: Cell Communication and Cell Cycle

Chapters 9, 5.6, 31.1, 31.4, 35.2, 35.3, 37.4, 33.5

4 weeks

UNIT FIVE: Heredity

Chapters 10, 11, and 12

4 weeks

UNIT SIX: Gene Expression and Regulation

Chapters 13, 14, 15, 16, 17.1, 17.2, 18.2- 18.6

4 weeks

UNIT SEVEN: Natural Selection

Chapters 19, 20, 21, 22, 23, 24

4 weeks

UNIT EIGHT: Ecology

Chapters 39, 40, 41, 42, and 43

4 weeks

TEACHER CONTACT INFORMATION :

I am available to assist students or confer with parents before and after school, during my prep periods(1st and 7th), and during Office Hours on Thursdays(7:45-8:25 AM).

My email address and telephone number are:

tdooner@carmelunified.org

624-1821 ext 3734

My preferred method of communication is e-mail. Response within 12 hours.

Safety:

The safety of students and staff is a top priority and all students and their parents are required to read and sign Flinn Scientific's Student Safety Contract. The contract developed by Flinn is comprehensive in nature and addresses all of the hazardous situations which can occur in a high school or college science classroom. Our classroom is equipped with proper ventilation, fire blanket and extinguishers, eye wash station, and first aid kits. Students will be provided with rubberized laboratory aprons and safety glasses for use during lab activities. Safety glasses will be sanitized between class periods with a UV Light Sanitizing Cabinet. I will always attempt to minimize student exposure to potentially hazardous substances and situations and provide them with a clean, organized, and safe laboratory environment with serviceable equipment. Students are expected to be active participants in creating a safe learning environment.

Textbooks:

Campbell Biology in Focus(AP Edition) First Edition. Urry, Cain, Wasserman, etal. 2014. Pearson

AP Biology Test Prep Series. Holtzclaw, Fred W. 2014. Pearson

All students will be issued these texts. They should be left at home. A class set of textbooks are available for use in the classroom.

CHS Testing Schedule:

The designated testing day for the Science Department is FRIDAY. This does not apply to short quizzes, presentations, etc.

Attendance Policies:

The scope of the content and the importance of the inquiry lab activities makes regular attendance a prerequisite to academic success. All CHS guidelines related to Tardiness and Truancy will be adhered to in this class. When excessive absences, or unexcused absences/tardies/truancies, begin to affect the academic progress of the student or adversely affect the learning environment, then parents will be notified and a teacher/student/parent/counselor conference will be arranged to help to identify and remediate the cause of the problem. Makeups for assignments/activities missed due to unexcused absence or truancy will be accepted following a teacher/student conference.

Grading:

Formative assessments(homework, study guides, data analysis problem sets, etc), laboratory activities, and summative assessments(quizzes, tests, and semester exams) will be used to assist the learning process and provide objective evidence of mastery of the AP Curriculum content.

Quarter grades will be based on: 65% Tests and Quizzes; 25% Lab Activities; 10% Homework and Classroom Assignments.

A minimum of three(3) summative assessments(Tests) will be administered each quarter along with quizzes as necessary. A comprehensive semester final will comprise 20% of the semester grade. Graphing calculators are permitted on all tests as well as during the administration of the AP Biology examination.

Semester letter grades will be assigned as follows: 90-100%: A; 80-89%: B; 70-79%: C; 60-69%: D; 59% and below: F

My School/Moodle:

Students should log on regularly to the AP Biology Moodle site in order to access daily assignments, answer keys, rubrics, supplementary readings, class notes and study guides, and links to AP Biology resources. It is a particularly helpful resource when absent.

Extra Credit:

Multiple opportunities to demonstrate mastery of the course content will be provided to all students throughout the year. No “extra” credit is available. The goal is for the course grade to reflect knowledge of the content.

I HAVE READ THIS COURSE SYLLABUS FOR ADVANCED PLACEMENT BIOLOGY:

Student_____ **Parent**_____ **Date**_____