

# AP BIOLOGY SYLLABUS

## COURSE DESCRIPTION

The AP Biology program provides an opportunity for **motivated** students to pursue **college-level** biological studies while still in high school.

The AP Biology course is designed to be the equivalent of a college introductory biology course taken by biology majors during their first year. The AP Biology course **differs significantly** from high school General Biology with respect to the type of textbook used, the **range and depth** of topics covered, the **level** of laboratory work done by students, and the **time and effort** required of students.

Upon successful completion of the Advanced Placement Biology Examination in May, students may receive college credit and advanced placement from the university or college they choose to attend. GFW AP Biology students have a history of performing very well on this test!

## TEXTBOOK AND LAB MANUAL

Text: Campbell, Neil A., Urry, Lisa A., et al. Biology in Focus (etext). Pearson Education Inc. 2014.

Lab Manual: Advanced Placement Program Biology Lab Manual by the College Entrance Examination Board. 2013.

## MATERIALS NEEDED FOR CLASS

- Chromebook
- 3 ring binder

## GRADING

Grades are based on points earned on assessments, homework, class participation, and lab work. Semester grades will be determined using the following criteria:

- Assessments are weighted to count 50% of your final grade.
- Labs are weighted to count 30% of your final grade.
- Homework and participation are weighted to count 20% of your final grade.

## GRADING SCALE

A	=	94 - 100%	C	=	74 - 77 %
A-	=	90 - 93%	C-	=	70 - 73%
B+	=	88 - 89%	D+	=	68 - 69%
B	=	84 - 87%	D	=	64 - 67%
B-	=	80 - 83%	D-	=	60 - 63%
C+	=	78 - 79%	F	=	below 60%

## AP EXAM

Students will have the opportunity to take the national AP exam in May. The score on the national AP exam does not affect the letter grade for the course.

## CLASS POLICIES

1. Be to class on time and be ready to start class when the bell rings. Cell phones need to be put away.
2. Come to class prepared with all required materials. This is a college course!
3. No food or beverages in science classrooms.
4. We will all treat each other respectfully and respect school property.
5. Late work will receive NO CREDIT. This is a college course!
6. Be ready to work each day... no free days! No whining about the work load. This is a college course!
7. Be prepared to put time in outside of class. You will need to do a substantial amount of reading. Tests will be challenging and will require more study time than you may have needed in the past. Study groups are a good idea. This is a college course!
8. Attendance is extremely important. It is very difficult to make up for missed class discussion and missed labs. If you have to miss class (not recommended) and know ahead of time, take the responsibility to find out what you will miss and have your work done when you get back. If you are absent the day of a lab, you will need to make the lab up in a timely manner when you get back.

**THIS IS A COLLEGE COURSE!**

# AP BIOLOGY

# 2017-2018 SCHEDULE

## First Semester

<u>Time</u>	<u>Topic</u>	<u>Labs</u>
3 weeks	<b>INTRO/CHEMISTRY OF LIFE</b> Chapter 1 Introduction: Evolution and the Foundations of Biology Chapter 2 Chemical Context of Life Chapter 3 Carbon and the Molecular Diversity of Life Chapter 6 An Introduction to Metabolism	AP Lab #13 Enzyme Catalysis Lab
2 weeks	<b>THE CELL</b> Chapter 4 A Tour of the Cell Chapter 5 Membrane Transport and Cell Signaling	AP Lab #4 Osmosis and Diffusion Lab
3 weeks	<b>CELL PROCESSES</b> Chapter 7 Cellular Respiration and Fermentation Chapter 8 Photosynthesis	AP Lab #6 Cellular Respiration Lab  AP Lab #5 Photosynthesis Lab
2 weeks	<b>CELL REPRODUCTION</b> Chapter 9 The Cell Cycle Chapter 10 Meiosis and Sexual Life Cycles	AP Lab #7 Mitosis and Meiosis Lab
3 weeks	<b>MENDELIAN GENETICS</b> Chapter 11 Mendel and the Gene Idea Chapter 12 The Chromosomal Basis of Inheritance	The Genetics of Fruit Flies Lab
5 weeks	<b>MOLECULAR GENETICS</b> Chapter 13 The Molecular Basis of Inheritance Chapter 14 Gene Expression: From Gene to Protein Chapter 15 Regulation of Gene Expression Chapter 16 Development, Stem Cells, and Cancer Chapter 17 Viruses Chapter 18 Genomes and Their Evolution	AP Lab #8 Bacterial Transformation Lab  AP Lab #9 Restriction Enzyme Analysis Lab

## Second Semester

<u>Time</u>	<u>Topic</u>	<u>Labs</u>
3 weeks	<b>EVOLUTION</b> Chapter 19 Descent With Modification Chapter 20 Phylogeny Chapter 21 The Evolution of Populations Chapter 22 The Origin of Species Chapter 23 Broad Patterns of Evolution	AP Lab #3 BLAST Lab
1 week	<b>PROKARYOTES</b> Chapter 24 Early Life and the Diversification of Prokaryotes	Gram Stain Lab
2 weeks	<b>PLANT STRUCTURE AND FUNCTION</b>  Chapter 28 Plant Structure and Growth Chapter 29 Resource Acquisition in Plants Chapter 31 Plant Responses to Internal and External Signals	AP Lab #11 Transpiration Lab
4 weeks	<b>ANIMAL STRUCTURE AND FUNCTION</b> Chapter 32 Homeostasis and Endocrine Signaling Chapter 35 The Immune System Chapter 37 Neurons, Synapses, and Signaling Chapter 38 Nervous and Sensory Systems Chapter 39 Motor Mechanisms and Behavior	AP Lab #12 Animal Behavior Lab
3 weeks	<b>ECOLOGY</b> Chapter 40 Population Ecology and the Distribution of Organisms Chapter 41 Species Interactions Chapter 42 Ecosystems and Energy Chapter 43 Global Ecology and Conservation Biology	AP Lab #10 Ecosystem Energy Dynamics Lab
2 weeks	<b>REVIEW FOR AP EXAM</b>	
Monday May 14th	<b>COLLEGE BOARD AP BIOLOGY EXAM</b>	
3 weeks	<b>BIODIVERSITY UNIT</b>	Simpson's Biodiversity Index Lab