

ADVANCED PLACEMENT BIOLOGY
MISS MAZUREK
ROOM 204
2017-2018



Hello Students:

Welcome to Advanced Placement Biology. My name is Miss Mazurek and I will be your instructor. This year marks the 16th year that AP Biology has been offered at Elizabeth Forward. The curriculum designed by the College Board with regards to major topics changes yearly so the course evolves more each year. You can access the AP Biology site at any time at <https://apstudent.collegeboard.org/apcourse/ap-biology>.

A.P. Biology is a college level course that is taught at the high school level. All A.P. courses require that the student complete most of the reading/assignments on their own time. I am the "tour guide"; I lead you through the information and answer any questions you may have.

A.P. Biology will be offered as a CHS class through Seton Hill University. I have provided you with the necessary papers containing the information that you need.

I hope that this class helps to prepare you for the exam, the rigors of a college science course, and that you have fun while learning the key concepts.

Miss Mazurek

COURSE TITLE	AP Biology	CREDIT VALUE	1.00 Credit
PREREQUISITE	<p>(1) Successful completion of Biology with a final grade of 90 % or better, or successful completion of Honors Biology with a final grade of 85% or better.</p> <p>(2) An overall G.P.A. of 3.0 or better</p> <p>(3) Successful completion of Honors Chemistry with an 80% or better, or successful completion of Academic Chemistry with an 85% or better.</p>	OPEN TO GRADE(S)	11, 12
DESCRIPTION	<p>Advanced Placement Biology is a college-level course available to juniors and seniors who qualify as per the criteria stated above. The AP Biology course is designed to help students develop their advanced inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains by emphasizing science practices.</p> <p>The science practices enable a student to establish lines of evidence and use them to develop and refine testable explanations and predictions of natural phenomena. Because content, inquiry and reasoning are equally important in AP Biology, each learning objective combines content with inquiry and reasoning skills described in the science practices.</p> <p>The key concepts and related content of AP Biology are organized around four underlying principles called the big ideas, which encompass the core of scientific principles, theories and processes governing living organisms and biological systems. There are required laboratory activities for each big idea. There is a summer assignment to be completed for the first day of class.</p> <p><u>Big Idea 1: Evolution</u> The process of evolution drives the diversity and unity of life.</p> <p><u>Big Idea 2: Cellular Processes: Energy and Communication</u> Biological systems utilize free energy and molecular building blocks to grow, reproduce, and to maintain dynamic homeostasis.</p> <p><u>Big Idea 3: Genetics and Information Transfer</u> Living systems store, retrieve, transmit, and respond to information essential to life processes.</p> <p><u>Big Idea 4: Interactions</u> Biological systems interact, and these systems and their interactions possess complex properties.</p> <p>* Students have the right to refuse to dissect, vivisection, incubate, capture, or otherwise harm or destroy animals or any parts thereof as part of their course instruction.</p> <p>This is offered as a College-in-High-School (CHS) course in affiliation with a local college/university for optional college credit.</p>		

I have prepared the following outline to explain the course and what my expectations are of you.

1) What is A.P. /CHS Biology?

The A.P. Biology course is designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year. Here is an excerpt from the College Board A.P. Biology course description (note the emphasis on inquiry):

The Course

The AP Biology course is designed to enable you to develop advanced inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. The result will be readiness for the study of advanced topics in subsequent college courses—a goal of every AP course.

The Emphasis on Science Practices

A practice is a way to coordinate knowledge and skills in order to accomplish a goal or task. The science practices enable you to establish lines of evidence and use them to develop and refine testable explanations and predictions of natural phenomena. Because content, inquiry, and reasoning are equally important in AP Biology, each learning objective combines content with inquiry and reasoning skills described in the science practices.

The science practices capture important aspects of the work that scientists engage in, at the level of competence expected of you, an AP Biology student.

The seven science practices are:

- 1. The student can use representations and models to communicate scientific phenomena and solve scientific problems.*
- 2. The student can use mathematics appropriately.*
- 3. The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.*
- 4. The student can plan and implement data collection strategies appropriate to a particular scientific question.*
- 5. The student can perform data analysis and evaluation of evidence.*
- 6. The student can work with scientific explanations and theories.*
- 7. The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.*

The key concepts and related content that define the revised AP Biology 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.

2) Why should I take the A.P. exam offered in May?

*******All A.P. Biology students can take the exam in May and you are responsible for paying the cost. A CHS Biology student can also take the A.P. exam if he/she wishes to do so. You should buy an A.P. Biology review guide for the exam. PLEASE make sure to get**

a review book that addresses the changes beginning with the 2012-2013 test administration. A good review book also contains a lab review and practice exams.

If you pass the A.P. Bio exam, you can choose from a variety of options made available to you by the college of your choice:

- a) receive an "A" in freshman Biology and move on to the next upper-level course offered during your freshman year*
- b) receive credit for another course (History, for example) and still take the freshman biology course (you'll probably earn an "A")*
- c) receive credit for freshman biology (non-Bio majors)*

(Colleges reserve the right to make the choice for you.)

Students who pass the A.P. Bio exam SAVE MONEY in college. The exam costs \$85.00. If you choose to take this course as a CHS course, you will still be receiving credits at a greatly reduced rate.

**Those students planning to take A.P. Biology as a CHS course through Seton Hill University are responsible for contacting their choices of colleges/universities to see if these credits will be accepted.*

3) Textbook and Supplement Aids:

We will be entering the second year of use for our textbook. It is entitled "Biology 11th edition" and the authors are Sylvia S. Mader and Michael Windelspecht. Every student will receive an access code for the website where you will find many resources to help you with this course. I chose to use this book because I feel it presents complicated information in a more "reader-friendly" way.

- a) Please feel free to purchase any study booklets that you may find to help you in understanding the material and concepts*
- b) Use the college board website and go the A.P. Biology page*

4) What topics will be covered in this course and on the examination?

Listed below is the former "big topic" outline that was used as a guide along with a listing of the required labs:

- I. Molecules and Cells 25%*
- II. Heredity and Evolution 25%*
- III. Organisms and Populations 50%*

Lab Topics: (often referred to as "the dirty dozen")

- 1) Diffusion and Osmosis**
- 2) Enzyme Catalysis**
- 3) Mitosis and Meiosis**
- 4) Plant Pigment and Photosynthesis**
- 5) Cell Respiration**
- 6) Molecular Biology**
- 7) Genetics of Organisms**
- 8) Population Genetics and Evolution**
- 9) Transpiration**
- 10) Physiology of the Circulatory System**
- 11) Animal Behavior**

- 12) Dissolved Oxygen and Aquatic Primary Productivity
- 13) Animal Diversity

Here are the new “big theme” ideas along with the suggested labs to use with each theme. College Board also requires that students complete eight inquiry- based labs (2 per theme). I will most likely use some of the previously required labs and some of the new ones in which you will have to design your own lab protocol by manipulating a different variable.

Big Idea 1: Evolution

The process of evolution drives the diversity and unity of life.

[Lab 1: Artificial Selection](#)

[Lab 2: Mathematical Modeling: Hardy-Weinberg](#)

[Lab 3: Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST](#)

Big Idea 2: Cellular Processes: Energy and Communication

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

[Lab 4: Diffusion and Osmosis](#)

[Lab 5: Photosynthesis](#)

[Lab 6: Cellular Respiration](#)

Big Idea 3: Genetics and Information Transfer

Living systems store, retrieve, transmit, and respond to information essential to life processes.

[Lab 7: Cell Division: Mitosis and Meiosis](#)

[Lab 8: Biotechnology: Bacterial Transformation](#)

[Lab 9: Biotechnology: Restriction Enzyme Analysis of DNA](#)

Big Idea 4: Interactions

Biological systems interact, and these systems and their interactions possess complex properties.

[Lab 10: Energy Dynamics](#)

[Lab 11: Transpiration](#)

[Lab 12: Fruit Fly Behavior](#)

[Lab 13: Enzyme Activity](#)

**** I DID NOT DEVISE THE CURRICULUM; I AM ATTEMPTING TO COVER WHAT HAS BEEN SET FORTH BY THE COLLEGE BOARD.**

****A bi-weekly schedule will be listed somewhere in the room (my chalkboard is gone and I need to find a space to put the schedule). Two of the four essays on the AP Biology exam will come from lab exercises. I will let you know in advance when we will be doing these labs. Please try to schedule appointments around the designated lab times if possible.**

5) What do I expect from you?

- a) mature behavior and attitude
- b) accept the fact that YOU are RESPONSIBLE for your own WORK ETHIC
- c) the grade that you receive in this course will be the grade that YOU HAVE EARNED
- d) to do the best job that you are capable of
- e) follow all classroom rules and instructions
- f) follow all lab procedures, especially those involving lab safety
- g) ask questions and schedule tutoring if needed
- h) you must provide your own latex or non-latex gloves for lab

6) Classroom Rules:

1. All school policies that are outlined in your student handbook are to be followed and will be enforced.

2. Be on time for class: You are expected to be in the room and in your seat when the bell rings.

If you are late, you must have a pass signed by the teacher you were with. This will be marked as an “excused late with a pass” in Power School. It does not count against you. You must sign in on the sign-in sheet (blue) located in the front of my room. You will include the name of the teacher who signed your pass and the time entered my class.

If you arrive late without a pass, you will be marked tardy. If you receive three (3) tardies, you will be assigned an after school detention. My detentions are served in Room 204 from 2:25 – 2:55. Your parents will be notified.

If you continue to be tardy to my class after your first detention, you will receive one detention per tardy. I will inform your parents and administration. Administration may also discipline you.

3. Be prepared for class: You are expected to bring all of your materials to class with you.

pencil/pen
binder with notebook paper
textbook (when required)
iPad (charged and having required apps)

4. First 5 minutes of class: You will copy the bell ringer question for the day on the form that has been provided for you. You will include the date and your response. You are expected to check your work when we review the answers and make any necessary changes.

Your bell ringer is on the front board next to the green turtle logo.

5. I do not issue hall passes except in the case of an emergency.

- * You must sign out/in when using the restroom pass (green sheet in front of the room)

6. Cell phone use is not permitted during class:

- Please turn them off and place them in your purse or backpack. They will not be out during class.
- ** Cell phones will be collected during all exams and reviews of corrected exams. They will be returned when all students have completed the exam/reviews are done.
- *** First offense: I take your phone. You get it back at the end of the period and I call home.

Second offense: I take your phone to the office. Your parents will be notified

7. You will treat everyone with courtesy and respect.

8. Lab Safety Rules: You are required to follow all safety guidelines and rules given during lab. Failure to do so will result in you receiving a ZERO for the lab. I do not want anyone to get hurt!!

9. Do not write on the desks or lift them with your legs. Please do not throw your heavy backpacks on the lab tables (loosens the top) or try to lift the tables free from the bolts holding them in place.

10. There is no eating or drinking in the room. This includes café purchases. If you have a medical condition that requires you to have food or beverages, please let me know.

11. My areas (desk, computers, cabinets) are off-limits to you.

12. iPads will be used during class when appropriate. When we are not using them, you will place it upside down on your desk or keep it in your backpack.

13. Use respectful language at all times.

Elizabeth Forward High School

BRAVE Warriors



Classroom Expectations

- **B** E SAFE
 - ✓ Listen to staff
 - ✓ Maintain personal space
- **R** ESPECT OTHERS
 - ✓ Be on time
 - ✓ Be polite
 - ✓ Use appropriate language and tone
- **A** CCOUNTABLE
 - ✓ Be prepared
 - ✓ Be honest
 - ✓ Do your own work
 - ✓ Use electronic devices only when permitted
- **V** ICTORIOUS
 - ✓ Do your best work
 - ✓ Celebrate academic success
- **E** NTHUSIASTIC
 - ✓ Have a positive attitude
 - ✓ Take ownership of learning

7) Grading Policy:

GRADING POLICIES:

1. All of your work is graded. These include homework, tests, and labs. Labs and homework make up 50% of your grade and quiz/test scores account for the other 50%. I will give you a grade sheet and show you how to keep track of your scores. I DO NOT CURVE AND I DO NOT ACCEPT LATE WORK!!! I also use the district grading scale and follow the high school grading policy.

90-100 A
80 - 89 B
70 - 79 C
60 - 69 D
0 - 59 F

2. If you are absent, you will have that amount of time to make up your work. For example, if you miss three days of school, you will have three days to make up your assignments. Exceptions will be granted for extenuating circumstances. It is YOUR responsibility to see me for your make-up assignments as soon as you return to school. Each class period has 2 folders on the front desk. There are folders for missed assignments and corrected work. Please make sure you look over any work you may have to do before you leave my room in case you have any questions.
3. Tests are announced at least one week in advance. For a one-day absence: if you miss the day before an exam, you will take the exam on the scheduled exam day. If you miss the day of the exam, you will take the exam the day you return. I have tutoring for all major exams. Tutoring dates are announced one week in advance too.
4. If you decide to skip my class or have an unexcused/illegal absence because you failed to bring in an excuse to your attendance officer within three days of your return to school, you will not receive any credit for that work. This is school policy.
5. Extra credit may be earned in three ways. You may turn in a science article from any news source with a brief summary of that article. You will receive 2 points per article (limit 2 per week) and they are due every Friday. I will demonstrate how to do these during class. I always ask three extra credit questions on your exams based on current events. You will have to read the paper, watch the news, and listen to the announcements. I also conduct a review game the day before a test. The rules will be explained in class. The winning team will receive five bonus points.
6. Plagiarism or any type of cheating will result in a grade of zero for that assignment.
7. AP Biology is a weighted course. Because it requires extra effort on your part, the class is worth an extra point.....this will help your GPA.
8. THE GRADE THAT YOU RECEIVE IN THIS COURSE WILL BE THE GRADE THAT YOU HAVE EARNED!



ACADEMIC INTEGRITY
SCIENCE



- **Try! Listen! Think!**
- **Use your iPad and phone for educational purposes**
- **Be prepared for your class**
- **Follow directions**
- **Be safe in the lab**
- **Do not cheat**
- **Do not get off task or give up**
- **Do not damage school property**

