

AP[®] Biology Syllabus

Course Overview

This course is designed to provide students with a solid foundation that is equivalent to an introductory college-level biology course. To meet this standard, the course is structured to cover four big ideas, enduring understandings, and science practices. Embedded in this structure is the process of inquiry in which students develop laboratory design procedures as well as critical thinking skills.

The class meets for 42 minutes every other day for the lecture portion. The class will also meet every other day for 84 minutes. This 84 minute block of time is used for student interactive laboratory investigations and hands-on activities to allow for a more meaningful connection to the topics covered throughout the course.

Teaching Strategies

- This course greatly depends on hands-on activities to enhance the learning experience. I firmly believe that students can only truly understand many of the important concepts by working directly with those concepts. This is accomplished through extended laboratory experiences as well as smaller hands-on experiences.
- Students will also engage in work that asks them to connect the material that is being taught with pre-existing knowledge. This is done through individual and collaborative efforts.
- Lab activities are all done with an inquiry based strategy. Students will be expected to design labs by developing hypotheses, identify variables and controls, determine experimental procedures, and collect and analyze data.
- Students are asked to complete directed reading assignments each night. This will allow for more class time to be spent on labs and hands-on activities.

Textbook

Biology In Focus. First edition. 2014. Urry, [et al.]
Pearson Benjamin Cummings

Advanced Placement Biology Content

This course is designed around the four big ideas and their enduring understandings as well as essential content.

The big ideas:

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

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

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

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

The Investigative Laboratory Component

The course also contains seven science practices throughout the course. Approximately 25% of the time in the course is dedicated to performing labs to meet engage in these seven practices. Included in this time, are 8 inquiry-based lab investigations. Additional applications of the seven science practices will occur during paired and group activities throughout the teaching of the content.

Science Practices

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.

Procedures and Rules

1. **Attendance:** The most difficult thing to do in this class is to learn/catch up on material that was missed when you are not in class. There is a large amount of learning that takes place each period and the fact that we build on the previous lessons concepts/skills, makes it difficult to learn missed material. *If you know that you will be out, please see me so that I can provide you with a way to not fall behind. You should also have a friend in the class pick up items that are handed out that day. If a test is missed, it needs to be taken the day you return.*
2. **Copying of work:** This includes tests, homework assignments, classwork, labs, etc. Much of what we do this year is about understanding the process of science. Asking for help from a peer is strongly encouraged but copying answers without understanding is not. Copying prevents you from going through the process of science and therefore learning. If ANY copying occurs, you will be given a zero without any opportunity to make up the grade.
3. **Late Submissions:** Handing in work on time is important as it keeps it relevant to the current topic being covered. Many times I will go over important concepts and skills on the work. If you have not completed it, your learning experience will be hindered.
4. **Quality of Work:** You should always put forth the highest quality of work possible. There are no opportunities to redo a lab or activity for poor effort.
5. **Websites:** Copies of class presentations, videos and objective sheets will be found online at www.mahoneyspage.com. If you are missing any of these, please go to the website to get a copy.

A second website called Mastering Biology is used for email correspondence and additional assignments. *Please email me through this system, not the school system.*

6. **Extra Help:** After school help will be given 2 days a week. I will try my best to keep them on Monday and Wednesday but meetings and other events may force me to move them. Due to the immense teaching commitment of the course, I cannot stay after additional days nor offer you periods to see me during school. It is unfortunate if the extra help days do not fit your schedule due to other commitments but it is beyond my control.

Things to do to be successful in class

1. **Be present:** Find everyway that you can to NOT miss class
2. **Be on time:** The first few minutes of class are meant to provide you with an overview of today's concepts and skills. You will be immediate disadvantage when showing up late.
3. **Do your own work:** YOU need to learn the material. You don't do that when copying. This includes doing work in class.
4. **Don't fall behind:** This is a college level class and that means you do college level work. There is homework just about every night. Falling behind makes it very difficult and overwhelming to catch up.
5. **Ask for help:** *This might be the biggest key to success.* We are ALL smart in this class. We can ALL be successful. We ALL need help at some point so just ask me and others around you for it. Whatever you need help with will not just disappear. Be confident in your abilities and ask!
6. **Study:** "Smart people" are smart because they study! Some students don't study because it would be devastating to try hard and not be successful. BLAH! Better to have tried...don't look back with regrets.