

The Classical Academy
AP Biology
Course Outline and Syllabus
Mrs. Sophia Smith
2022- 2023

CONTACT AND GENERAL INFO

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Extra help times: Visit me during flex, lunch or after school (3-4 pm) and by appointment.

COURSE OVERVIEW

AP Biology is an intensive class intended for students who want to challenge themselves in a science course. The class is designed to be the equivalent of a two-semester college introductory biology course. Students in AP Biology are expected to be independent learners who come to class prepared to build on their previous knowledge about the world around them. We will not be spending much time reviewing terminology that you have learned in General Biology and General Chemistry – our focus will not be on memorization. We will go into more depth studying the various major themes of biology, including reading excerpts from scientists' actual published work, and students will need to be prepared to go beyond basic recitation of memorized information and apply their knowledge to new questions or circumstances.

The course will follow a logical progression from the chemistry of life to the structure and function of cells to the diversity of living organisms to the interactions of all of the living organisms. However, as we move through this curriculum, you will be making connections to previous content and putting the new information into the “big picture”. My hope is that you will come to marvel at the dynamic state of the study of biology while studying the various structures and processes taking place in living organisms. You will be compelled to analyze the ethical implications of what we are learning about the natural world and the importance of understanding the impact of what we do on that world. No unit will be studied in isolation! We will be tying all of this together with the four **Big Ideas** (BI) and the enduring understandings (EU) identified in the AP Biology Curriculum Framework. To separately study each Big Idea would be a completely artificial construct – we will attempt to weave them together as we progress through the year. We will point out the connections as we go. The four Big Ideas are:

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

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

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

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

While we will not be doing the “march through the kingdoms” or the “rush through animal systems” as units, we will be pulling many illustrative examples from the various types of organisms and from the various animal systems. For example, when we discuss the importance of surface area to volume ratio, we will specifically study plant root hairs, villi in the human small intestines and alveoli in the human lungs.

We will be actively engaged in the science of biology. There will be many group activities and inquiry-based labs where students will work together to design & run labs as well as to analyze their data in order to connect their experiences with the biology concepts we will be studying. We will spend approximately 25% of our time together designing, performing, and analyzing labs as well as doing various group activities. The six **Science Practices** listed in the AP Biology Curriculum Framework will become second nature as we repeatedly perform these practices. The six Science Practices (SP) are:

1. **Concept Explanation:** Explain biological concepts, processes, and models presented in written format.
2. **Visual Representations:** Analyze visual representations of biological concepts and processes.
3. **Questions and Methods:** Determine scientific questions and methods.
4. **Representing and Describing Data:** Represent and describe data.
5. **Statistical Tests and Data Analysis:** Perform statistical tests and mathematical calculations to analyze and interpret data.
6. **Argumentation:** Develop and justify scientific arguments using evidence.

REQUIRED MATERIALS

- **Textbook:** Mader, Biology ©2019, 13e
- **Computer access with internet**
- **Personal Supplies (Bring to class every day):**
 - 2 composition notebooks with graph paper. (Spiral notebooks or notebooks with perforated pages are NOT acceptable.)
 - Pencils, blue or black pens, colored pens, red pen
 - Highlighters and dry erase markers (at least 2 of each)
 - 1 roll of tape
 - Calculator
 - Sticky tab dividers or small post-it notes (for your composition notebook- optional)
- **Class Supplies (choose 1 or more!)**
 - Clorox wipes
 - Roll of paper towels
- **Recommended materials:**
 - Any AP Biology Test prep book that is made for the Fall 2019 curriculum redesign
 - I recommend Pearson’s AP Biology Prep Book (author: Holtzclaw). Honestly, they all cover the same content, so any option you choose will be great!

CLASS WEBSITE (SCHOOLGY)

Our class website is on **Schoology** (<http://asd20.schoology.com/>). You should automatically have access to the AP Biology course. (Find it by logging in → click on “Courses” → choose “AP Biology”)

You’ll find the following on the website:

1. **Daily Agenda Updates:** Click on the “updates” tab and you will see what we did each day and the HW or assignments attached. This should be the first place to go when you are absent from class and then come talk to your teacher.
2. **Course Powerpoints and Handouts:** If you want to review the powerpoints, or need to print off a handout that you lost from class, you can find them on Schoology under the “materials” tab.

EXPECTATIONS

1. **Be Respectful:** Respect your teacher, classmates, and the materials in our classroom. This is a safe environment where you can express your ideas, but this means we agree to be supportive, kind, and encouraging to those around you and always act with integrity.
2. **Be Responsible:** Turn in assignments on time, take notes during class, and be organized.
3. **Be Prepared:** Be in your seat when the bell rings, with your materials on your desk and assignments completed.
4. **Participate:** Participate in **all** of the activities, labs, and discussions we have in class. Participating is key in order to learn, so I expect you to participate as much as you can daily. Asking questions is encouraged!

BEHAVIOR VIOLATION CONSEQUENCES

If the above expectations are not met, consequences will follow. Inappropriate behavior will be followed with an appropriate consequence such as detention, conversations with me, contacting parents, etc.

* I reserve the right to assign consequences at a level consistent with classroom behavior depending on the severity of disrespectful or disruptive action/attitude.

GRADING

This class is weighted on a 5.0 scale as long as you take the AP Exam in May. This class will use the standard grade scale at TCA (93 – 100% = A, 90 – 92.9% = A-, etc.).

Grade Percentages: Grades will be weighted according to these categories:

- 50 %: Assessments (Tests and Quizzes) (Including Final Exam)
- 30 %: Lab Work (lab write-ups, lab quizzes, and lab projects)
- 20 %: Daily Work (reading notes, bellwork, classwork)

POLICIES

Lab Safety: It is imperative that students use safe laboratory techniques at all times. Under no circumstances may you touch the work of another lab group or otherwise affect/sabotage their work in any way (even in jest). Failure to adhere to the safety requirements in the lab will result in the removal of the student from the lab (and a zero for that lab’s grade) to safeguard the entire class and their work.

Absence/Attendance: Class will meet every day for 50 minutes. Attendance is essential as an extensive amount of material is covered in each class. Plan ahead if you know you are going to be absent.

- *YOU* are required to check the Absent Bin, Mrs. Smith's BILL, and the "updates" tab on Schoology if you are absent. You will receive **1 day** to turn in assignments for each day you are absent.
- If a **quiz or test** is missed, the student must arrange to make it up during flex or after school **within 2 days** or they may begin to lose points on the quiz/test.
- If a **lab** is missed, it is the responsibility of the student to get all notes, data, or lab information from another student, and the student **is still responsible** to turn in all lab-related activities.

Late Work: School wide policy is that students are expected to self-advocate. Late work will be accepted for 20% off until the end of the unit, when it will turn into a zero if still not turned in.

Homework/Studying: Students are expected to spend around 20-60 minutes per night studying or doing biology homework:

- Students should do their homework, finish their classwork, read the topic material or watch the assigned videos **prior** to coming to class and be prepared to participate actively in all discussions, activities and labs.
- Consistent daily study will pay off much more than frantic last-minute study the night before an exam!

Each student's success in this course is up to YOU and your CHOICES.

Academic Honesty: You are expected to always do your own work. This applies to everything you do in this class (including lab write-ups, article summaries, reports, exams, etc.). Plagiarism (including cutting and pasting from a website or copying another student's work) will result in a zero. You may work together to discuss analysis questions, etc. – you may NOT copy down someone else's answers! If I find this happening, I will give the copier and the person whose work was copied both zeros, an office referral, and a parent notification.

AP Exam: All students enrolled in AP Biology are expected to sit for the AP exam, which will take place on *Wednesday, May 10, 2023 at 12pm*. Review for the exam will take place mostly outside of class. During the spring semester, we will also take a mock exam to prepare you for the rigor of the actual exam.

TIPS FOR SUCCESS

1. Come to class **prepared** to learn each day. This means you have done any required readings, homework or videos and brought all required materials.
2. **Find a method for keeping track of assignments and commitments you have to complete each week.** This can be a Google Calendar, a paper planner/agenda, or some other time management app.
3. Allocate approximately **30 minutes** daily to study for this course. During this time, read and make notes about the text. Write questions about concepts you don't understand to ask in class the next period. Review any notes taken during class the day they are taken.
4. Form study groups with 2-3 others in your class. Larger groups are unproductive.
5. **Ask lots of questions**--don't be afraid! Part of learning the process of science is questioning.
6. When taking notes, **don't write everything you hear being said!** Write down key words and concepts. Listen for catch phrases like "this is important" or "remember this."
7. When you are truly struggling with a concept, **come in for tutoring.** I am here to help!

I am excited to see what this year holds for our AP Biology class, and believe that if you put in the work I ask of you, you will be successful and have fun at the same time! - Mrs. Smith