



HAPEVILLE CHARTER CAREER ACADEMY

FULTON COUNTY PUBLIC CHARTER HIGH SCHOOL

IN PARTNERSHIP WITH ATLANTA TECHNICAL COLLEGE

CANDACE BETHEA, PRINCIPAL

AP BIOLOGY COURSE SYLLABUS

COURSE TITLE: AP Biology

TERM: Fall/Spring 2017-2018

TEACHER: S. B. Gore

ROOM # 156

Email Address	sgore@hapevillecharter.org
Teacher Web Page	goreweebly.com
Tutorial	Monday after school 3:50 - 4:50 pm

COURSE DESCRIPTION

This is a college-level biology course. The objectives for this course follow the College Board syllabus, preparing students for the optional Advanced Placement exam.

COLLEGE BOARD REQUIREMENTS	UNITS/TOPICS SEMESTER 1	UNITS/TOPICS SEMESTER 2
<p>Big Idea 1: <i>The process of evolution drives the diversity and unity of life.</i> Big Idea 2: <i>Growth, reproduction and maintenance of the organization of living systems require free energy and matter.</i> Big Idea 3: <i>Living system store, retrieve, transmit and respond to information essential to life processes.</i> Big Idea 4: <i>Biological systems interact, and these systems and their interactions possess complex properties.</i></p>	<p>Big Idea 1</p> <ul style="list-style-type: none"> Evolutionary Biology <p>Big Idea 2</p> <ul style="list-style-type: none"> Free Energy Exchange & Cellular Processes <p>Big Idea 3 (Introduction Only)</p> <ul style="list-style-type: none"> Genetics & Biotechnology 	<p>Big Idea 3</p> <ul style="list-style-type: none"> Genetics & Biotechnology <p>Big Idea 4</p> <ul style="list-style-type: none"> Biochemistry & Ecology

INSTRUCTIONAL MATERIALS AND SUPPLIES

Published Materials	Instructional Supplies
<p><i>Biology</i> (11th Edition, Campbell/Reece)</p> <p><i>AP Baron Book and Flash Cards</i></p>	<ol style="list-style-type: none"> 1 Composition Notebook, 1 100 pg subject spiral notebooks 4 college 70 pg notebook Calculator 3 ring binder



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EVALUATION AND GRADING

Assignments	Grade Weights	Grading Scale
1. Classwork & Homework 2. Investigative Experiment/Inquiry Notebooks 3. Unit Tests 4. Pre-Lecture Quizzes 5. Pre-Lab Quizzes 6. Weekly Content Quizzes 7. Projects/Independent Chapter Learning 8. Final Exam/Practice AP Exams	Grade Determination: The following calculations for the semester average will be used: Summative Assessments 35% Quizzes 10% Assignments 15% Laboratory work 20% Final Exam 20%	A: 90- above B: 89-90 C: 79-70 D: 69 - below

OTHER INFORMATION

Expectations for Academic Success	Additional Requirements/Resources
1) Read and Review daily 2) Ask questions 3) Participate constructively as a team member 4) Come prepared each day with materials 5) Review multiple sources of information 6) Challenge yourself to continuously improve 7) Complete all assignments in a timely manner 8) Consult teacher website, calendar and resources often	<ul style="list-style-type: none"> • Tutoring Available – Mondays • Online Resources – posted on teacher web page and • Attend review sessions when scheduled • Establish a study group and USE IT!

COURSE PHILOSOPHY

My AP Biology course is designed to offer students a solid foundation in introductory college-level biology. By structuring the course around the four big ideas, enduring understandings, and science practices I assist students in developing an appreciation for the study of life and help them identify and understand unifying principles within a diversified biological world.

What we know today about biology is a result of inquiry. Science is a way of knowing. Therefore, the process of inquiry in science and developing critical thinking skills is the most important part of this course.

At the end of this course, students will have an awareness of the integration of other sciences in the study of biology, understand how the species to which we belong is similar to, yet different from, other species, and be knowledgeable and responsible citizens in understanding biological issues that could potentially impact their lives.



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COURSE OVERVIEW

AP Biology is intended to challenge student abilities to understand problems, design and implement controlled experiments, manipulate data, draw conclusions, think analytically, and develop hypotheses within the realm of biological science. It is a year-long course with classes meeting every other day for 90 minutes. The course is organized around the four Big Ideas from the AP Biology curricular requirements – these can be found via the following web link: http://www.collegeboard.com/student/testing/ap/sub_bio.html:

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

Big Idea 2: *Growth, reproduction and maintenance of the organization of living systems require free energy and matter.*

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.*

Science Practice 1

The student can use representations and models to communicate scientific phenomena and solve scientific problems.

Science Practice 2 Science Practice 3

The student can use mathematics appropriately.

The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course. **Science Practice 4**

The student can plan and implement data collection strategies in relation to a particular scientific question. (Note: Data can be collected from many different sources, e.g., investigations, scientific observations, the findings of others, historic reconstruction and/or archived data.)

Science Practice 5 Science Practice 6 Science Practice 7

The student can perform data analysis and evaluation of evidence.

The student can work with scientific explanations and theories.

The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

The ultimate goal in the course is to promote internalization of content – when students can make connections between current learning and prior knowledge, then concepts will be remembered, and novel applications of content can be made.

When needed, extended lab time is **REQUIRED** throughout the school day. This extended time begins at 3:50 PM and may occur any time throughout the school day at the student's convenience. This makes it possible to perform all 13 required labs in the AP Lab Manual for Students as well as many additional labs during the course of a school year. Additionally, the extended time may be used in the fall and spring for both study sessions and administering practice AP Exams.



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TEACHING STRATEGIES

Class time is spent in lecture, class discussion, computer simulations and activities, investigative experiments and testing. Lectures are presented in PowerPoint® format, with visuals added (video clips, transparencies, internet, etc.). All PowerPoints are posted on engage and the class website. Student notes to accompany PPT presentations are provided at the beginning of each lecture. Students are encouraged to read ahead and add to PPT notes during lecture, making it easier to address questions regarding content.

Make Up Work

* *Quiz/Make Up*- Students must make up any quiz or test the following Monday of his/her absence after school during tutorial.

* Notebook checks - All notebooks are checked on quiz and test days. If the student is absent on the day of the notebook check, the notebook will be checked the next test or quiz whichever comes first.

* *Notebook check make up* - If a student does not have his/her assignment in the notebook, the assignment is not completed, or the student does not have the notebook in class the student will receive a **zero** on that assignment. The student will have the opportunity to complete the assignment and get the assignment rechecked on the next test or quiz day whichever one comes first. Students will receive a 30 point deduction every check until the assignment is turned in.

Code Violation (Honesty):

Rule 9. Honor Code Violation (Honesty)

The expectation is that each student will be honest and submit his/her own work. Cheating, plagiarism and other Honor Code violations are strictly prohibited. Examples of violations of this rule include, but are not limited to: copying or "borrowing" from another source and submitting it as one's own work, seeking or accepting unauthorized assistance on tests, projects or other assignments, fabricating data or resources providing or receiving test questions in advance without permission, working collaboratively with other students when individual work is expected. See Policy JCD, Student Academic Integrity, and the school's Honor Code for more information.

Extra Credit

There will be no extra credit assigned by the teacher.

Provision for Improving Grades:

Opportunities designed to allow students to recover from a low or failing cumulative grade will be allowed when all work required to date has been completed and the student has demonstrated a legitimate effort to meet all course requirements including attendance. Students should contact the teacher concerning recovery opportunities. Teachers are expected to establish a reasonable time period for recovery work to be completed during the semester. All recovery work must be directly related to course objectives and must be completed ten school days prior to the end of the semester. Teachers will determine when and how students with extenuating circumstances may improve their grades.



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SCHOOL CANCELLATION POLICY

In the event of a school cancellation due to weather conditions, etc., students are required to check the AP Biology web page for their daily assignment...**THERE WILL BE AN ASSIGNMENT EACH DAY THAT SCHOOL IS CANCELLED – AND THIS MATERIAL WILL NOT BE COVERED IN CLASS!** Our assignments will be posted on engage/class website in the appropriate unit section. *We have a finite amount of time to prepare for the AP exam in May, and it is therefore necessary to keep moving forward with the content whether or not we are in school.*

TEXTBOOK

Campbell, Neil A. and Reece, Jane B. Biology, 11th edition. Pearson Education, 2016.

THE PRACTICING BIOLOGY SPIRAL NOTEBOOK

Instructions for formatting your homework questions will be provided at the beginning of the school year. Students are encouraged to bring this notebook to class **daily** and refer to questions often as they reflect the types of questions seen on the AP Biology exam in May. This should be four 1-subject spiral-bound collegeruled notebooks, with practicing biology questions pasted in each section as follows: 1. Practicing Biology Qs - Big Idea 1

2. Practicing Biology Qs - Big Idea 2
3. Practicing Biology Qs - Big Idea 3
4. Practicing Biology Qs - Big Idea 4

THE INVESTIGATIVE EXPERIMENT/INQUIRY NOTEBOOK

The course covers a minimum of 8 of the 13 investigative experiments outlined in the AP Biology Lab Manual for Students, as well as additional investigations that address the big ideas and enduring understandings of the course. These are modified as necessary to fulfill the course objectives. This requires approximately 25% of class time to be devoted to experimental design/data collection.

Investigative Experiment/Inquiry notebook requirements will be provided at the beginning of the school year. All investigations will be submitted in the inquiry notebook and should follow the guidelines outlined in the notebook requirements.

GENERAL GOALS OF INVESTIGATIVE EXPERIMENTS

It is absolutely essential that you come to class prepared on lab days. Therefore, you may be given a pre-lab quiz for many labs performed over the course of the school year. You will need to read/understand the lab in advance and demonstrate a general knowledge of the procedures, purpose, and expected results of each lab.



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ADDITIONAL CAVEATS

You should check with the college or university you hope to attend for their policies related to AP exam credit. Policies vary from school to school and are subject to change over time.

Because class sessions will introduce new material, allow time for questions, include performance of labs with highly perishable materials/organisms, and include special instructions, **there is really no way to fully make up a missed class or missed lab**. It is, therefore, essential that the student make a conscientious effort to attend every class and **be prepared to participate**. Attendance will be taken at each class session. It is my expectation that ALL students registered for AP Biology WILL take the AP exam.

STUDY SUGGESTIONS

- Focus in class – paying attention in class can save you hours of studying outside of class.
- This is a college level course and the class will be handled as such, you will be graded primarily on tests and labs and you will be expected to monitor and analyze your own learning.
- Biology is different from other introductory courses in terms of the amount of vocabulary involved to get a basic understanding of the science. You **must** study some every day. Waiting to review your notes until just before an exam is a **bad** idea. Staying on top of the material will help you develop a deeper understanding and keep the material from seeming overwhelming and confusing.
- There are study guides, chapter review questions, practice essay prompts, tutorial activities online for each topic – these items are **highly useful**; be sure you make use of them bring any questions you have to class.
- Make use of ALL online resources (especially practice quizzes and animated biological review videos).
- Come in for help or get help from a classmate as soon as you have trouble with a concept, you need to be an advocate for your own learning. Consider forming a study group, even if it's only with one other person.
- Keep an organized lab notebook and organized notes.
- Your syllabus and pacing guide as well as our class web page is your best friend in this class – check it frequently and use it to plan your studying – you always have homework in AP Bio, if nothing else, start reading ahead.
- After a quiz or test take time to figure out why you missed questions – think about whether you misread the question or needed to study more. If you needed to study more, do it right away – the concepts build on each other AND you will be having comprehensive exams at the end of both semesters. And, of course, **remember you are always working toward your AP exam in May.**
- Make sure you do your labs carefully and completely and that you understand what you're doing and why you're doing it. Labs are an important part of your preparation for the AP exam, especially for the essay questions.
- Make up labs immediately – biology lab materials usually have a short shelf life – you can't do a lab if the organisms are no longer fresh, no longer alive, or are no longer in the right stage of their life.



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STUDENT LAB SAFETY CONTRACT

Science is a hands-on laboratory class. You will be doing many laboratory activities which may require the use of potentially hazardous materials. Safety in the science classroom is the first priority for students, teachers, and parents. To ensure a safe science classroom, this list of rules has been developed and provided in this safety contract. These rules must be followed at all times. This copy is to be kept in your science notebook as a constant reminder of the safety rules.

General Guidelines:

1. Conduct yourself in a responsible manner at all times in the laboratory. Horseplay, practical jokes, and pranks are dangerous and are prohibited.
2. Follow all written and verbal instructions carefully – be sure to read over labs COMPLETELY before attempting to begin, and be sure you UNDERSTAND WHAT IS REQUIRED. Unauthorized experiments are prohibited.
3. Never work alone. Be alert and proceed with caution at all times, and use the buddy system to check for necessary materials.
4. When entering a science room, do not touch ANYTHING until instructed to do so. Always report directly to your assigned seat and wait for directions.
5. NO FOOD, DRINKS, CANDY, GUM, etcetera at any time in the lab – this includes water! You may have water in class during lecture, films, etc, but if lab is involved, there is NOTHING going into your mouth!!!
6. Keep your work area as clean (*if not cleaner than*) you found it. You are responsible for cleaning up your own messes. If you see someone else leaving a mess, please notify teacher – otherwise, any messes left are the responsibility of the CLASS.
7. Keep aisles clear. Keep chairs and bookbags tucked under desks.
8. Know the locations and operating procedures of all safety equipment including the first aid kit, eyewash station, safety shower, and fire extinguisher. Know where the nearest fire alarm and exits are located.
9. Dispose of all waste properly. Sinks are to be used only for liquids designated as acceptable by teacher. All solids should be disposed of in the proper containers – paper lab trash goes into the trash can, broken glass into the glass disposal box, dissected specimens to the location deemed appropriate by teacher. If you do not know where to throw something away at, ASK FOR ASSISTANCE – DO NOT JUST FIND SOMEWHERE TO STASH IT!!!!
10. Be sure to read all labels and equipment directions carefully.
11. Keep hands away from face, eyes, mouth, and body while using chemicals or preserved specimens. **Wash your hands with soap and water after performing all experiments.**
12. Clean, rinse, and wipe away all puddles from work surfaces (including the sinks) at the end of an experiment. Return all equipment clean and in working order to the proper location. NEVER LEAVE DISSECTION TOOLS OR SCOPE MATERIALS DAMP!!!
13. Know what to do if there is a fire drill or any other evacuation procedure during a lab; containers must be closed, gas valves turned off, and any electrical equipment turned off and unplugged.
14. Handle all living organisms used in lab in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.
15. When using scalpels and other sharp instruments, always carry with tips and points aimed down and away from your body. Grasp sharp instruments only by the handles.



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Clothing

17. Students will wear safety glasses at all times when chemicals, heat, or glassware are used. There will be no exceptions to this rule!!!
18. Contact lenses should not be worn when using chemicals – including specimen dissection.
19. Dress properly during a laboratory. Long hair should be caught back, dangling jewelry should be removed, and loose clothing should be secured. **Shoes must completely cover the foot – no sandals or open-toed shoes allowed during lab time.**
20. Lab aprons will be worn during all labs that involve chemicals or equipment.

Accidents and Injuries

21. Report any accident (spill, breakage, equipment damage, etc.) or injury (cut, burn, etc.) to the instructor immediately, no matter how trivial it may appear.
22. Students ARE responsible for any breakage or damage done to lab equipment or any other classroom supplies that must be replaced by the school. The instructor will determine replacement/repair charges and the student will be charged the appropriate fees.
23. If a chemical should splash into your eyes or on your skin, notify teacher and report immediately to the eyewash station and/or safety shower to flush the affected area with water.



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RECEIPT OF MATERIALS

This page needs to be signed and returned to your AP Biology teacher ASAP. You are to keep the syllabus and lab contract in your science notebook for quick reference.

You and a guardian must sign for the syllabus **AND** lab contract separately. By doing so, you acknowledge receipt of these materials **AND** that you have thoroughly read both documents. **YOU AND YOUR GUARDIAN MUST ALSO INITIAL EACH LINE HIGHLIGHTED BELOW – INDICATING THAT YOU ARE AWARE OF SPECIFIC REQUIREMENTS FOR THIS COURSE.**

Syllabus:

I have read the syllabus and pacing guide in its' entirety and am aware of the classroom policies, procedures, and expectations.

NOTE: Any portion of this syllabus or pacing guide may be changed throughout the year as necessary to ensure a constructive and productive learning environment. *You will be notified of any changes.*

→Student Name (print): _____

→Student Signature: _____

→Parent Name (print): _____

→Parent Signature: _____

Lab Agreement: Student:

I have read/been explained and agree to follow all of the safety rules set forth in this contract. I am aware that any violation of this contract or misbehavior on my part may result in removal from the laboratory, office referral, receiving a zero on the assignment, and/or any combination of these consequences.

→Student Signature _____

Parent/Guardian:

I have read this safety contract and am aware of the policies and consequences of violation of said contract.

→Parent Signature _____

Additional Requirements Specific to this Course – PLEASE INITIAL BELOW (PARENT & STUDENT)

1. _____ | _____

Additional time AFTER school or throughout the school day *may be required periodically.* Time will be used to complete labs, participate in study sessions, administer practice exams, etc.

2. _____ | _____

Students enrolled in AP Biology should be aware that they will need to devote a significant amount of time PER DAY and EACH WEEKEND to their biology studies. This will include homework assignments, readings, research, lab reports, essay practice, and take-home quizzes/exams.



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3. _____ | _____

Students enrolled in AP Biology are aware that there will be a project/independent study assignment during Thanksgiving Break, Winter Break, and Spring Break. All content material covered during a break period will be assessed on the following unit test.

4. _____ | _____

When a student is absent for a test, he or she will be expected to take the test the first day they return to school.

AP BIOLOGY – PARENT VIDEO CONSENT FORM

Throughout the school year we may have time to view videos or clips that pertain to various topics we have covered in AP Biology. We may watch clips from the films or even have time after school to view the films. These videos have been issued a rating of PG-13, and thus, require your approval before your student will be permitted to watch them. Below, you will find a brief description of each video, and how this film pertains to our class (Big Ideas and Science Practices). Please **Initial next to each video that you approve** for your students' viewing. By signing below, you acknowledge that you have read this consent form, in its entirety, and you acknowledge that the initialed films, below, may be viewed by your student. Please feel free to contact me, if you have any questions about the films that will be shown. Thank you so much for your support & participation in your students' success!

_____ **Jurassic Park** (1992) – **PG-13**: During a preview tour, a theme park suffers a major power breakdown that allows its cloned dinosaur exhibits to run amok. This movie pertains to our Genetics discussion on the importance of ethics in Biotechnology. (Big Ideas 1 and 3, Science Practices: 3, 4, 5, 6).

_____ **The Martian** (2015) – **PG-13** (Based on the novel by Andy Weir) An astronaut becomes stranded on Mars after his team assume him dead, and must rely on his ingenuity to find a way to signal to Earth that he is alive. (Big Ideas 2 and 4, Science Practices 1-7)

_____ **GATTACA** (1997) – **PG-13**: The question of genetically engineering human beings comes into play, as a genetically inferior man assumes the identity of another, in order to reach his dream. This movie addresses our discussion on genetic technology, and how it is being used in the future (Big Ideas 1 and 3, Science Practices: 1, 3, 5, 6, 7).

_____ **Contagion** (2011)- **PG-13**: Healthcare professionals, government officials and everyday people find themselves in the midst of a worldwide epidemic as the CDC works to find a cure. (Big Ideas 1, 3 and 4, Science Practices 1 - 7)



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Parents: By signing below, you acknowledge that you have READ & UNDERSTAND the above Video Consent form. Your student will be permitted to watch the movies you have initialed above, if they are presented in the classroom.

Parent Signature: _____ **Date:** _____