Advanced Placement Biology

Course Syllabus
Fall Semester 2011
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Chattahoochee High School's Mission Statement:
A community dedicated to learning and committed to excellence.

Introduction

Welcome to Advanced Placement Biology. This is a college level General Biology course and will cover a large amount of material in a relatively small amount of time. It is designed for students who plan to continue to study science in college. You are expected to have reviewed your first year Biology material during the summer assignment. Your previous biology course will serve as a background for a more detailed, technical and theoretical study of life. Yes, I know you don't do much experimentation or think about the citric acid cycle everyday, but the processes we will study happen whether you like it or not. My goal in this course is to help you gain a greater understanding of the often times complex mechanisms that are involved in the interactions around you.

The course is designed to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology emphasizing an understanding of science as a process rather than an accumulation of facts, recognition of evolution as the foundation of the modern biology model, the integration of the general topics of biology through the eight major themes from the AP Biology Curriculum Requirements, and application of biological knowledge and critical thinking to environmental and social concerns. The course emphasizes biological concepts of Molecules and Cells, Heredity and Evolution, and Organisms and Populations.

This is my eleventh year teaching. I taught A.P. Biology for the past two years here at Chattahoochee High School. Previously, I taught Chemistry, A.P. Chemistry and Environmental Science near Boston in Quincy, MA. Before Quincy High, I graduated from Harvard with a Masters in Education. I have also taught general science in Nepal as a Peace Corps volunteer.

My sincere hope is that each and every one of you receives a 5 on the AP Biology Test. If you need additional assistance outside of class times, you can also make arrangements to see me before or after school anytime. I am available for help sessions before and after school on Wednesday. Furthermore, I believe you should form study groups. In addition, if you need to get in touch with me at any other time, you can email me at wolfed@fulton.k12.ga.us.

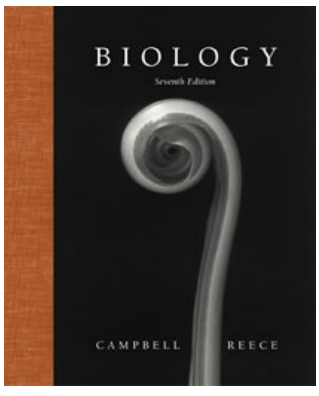
RULE 1: You are not allowed to forget anything. The AP Exam is very comprehensive and all exams that I give will be cumulative.

The AP Biology Test

The AP Biology test covers a very broad range of biology. For that reason, we will be moving fairly quickly and it is important that you stay caught up and do your homework. Previous students success has been based on how dedicated they are to finishing there homework on time. For more information on the outline of the test, take a look at the College Board site. **The College Board AP Biology Exam will be given on May 14, 2011 at 8:00am.** Location TBA in April 2011.

Materials

1. Binder or Notebook – You must keep a binder organized into 3 sections: Notes, Homework/Classwork, and Labs. Within each section, you should keep the papers organized by date. I will check your binders once a term. Normally this is not done in a college level class, but I believe this help you succeed in this class.
2. Web Resources – The textbook and additional resources are available on-line. Each student will be provided with registration instructions for obtaining a log on ID & password necessary to access the online textbook and resources from the textbook website (http://www.aw-bc.com/campbell).
3. Textbook – You must return the book that you are assigned at the end of the year. The full cost of replacement for a textbook will be assessed for any student who fails to turn in the book they were issued, or if the Fulton County barcode is missing or damaged. Students may also be fined for damage that has occurred to the textbook during the school year. The book we will be using: the book we will be using: **Campbell, N. A. & Reece, J. B. Biology, 7th Edition. San Francisco, CA: Benjamin Cummings, 2005. ISBN: 0-8053-7146-X $109**



4. Lab Manual – The College Board lab manual will be issued to students. These cost $20.

Other Resources

- The Princeton Review: Cracking the AP Biology Exam is an excellent study guide that I would encourage you to purchase. As the AP Exam grows nearer we will be looking for all the practice problems we can get our hands on. I recommend the Princeton Review out of all the books.
- AP Biology, An Apex Learning Guide (Kaplan AP Biology: An Apex Learning Guide). You could also check out this review guide.
- Barron's How to Prepare for the AP Biology Advanced Placement Examination. Another good AP study guide.

Assessment

Your performance in Biology will be assessed based on formal quizzes and tests as well as informal work done in class. Your grades will be based on homework, classwork, participation, labs, projects, tests and quizzes. Classwork will include lab work, note taking, activity sheets, and short presentations. Projects might include essays, research papers, posters and other multimedia presentations. Attendance will also be a significant factor in determining your grade. If you miss school, you will fall behind.

Grading Policy

Your grade for any given assignment as: $\frac{points\ earned}{points\ possible}$

Semester Grade	
Homework	10%
Labs and Projects	20%
Tests and Quizzes	55%
Final Exam	15%

Grade Scale	
A	100-90
B	89-80
C	79-70
F	Below 70

Homework

Homework will be assigned and collected on a daily basis. You will be given a variety of homework assignments to prepare you for class. Usually you will be given a daily reading assignments and a set of questions, problems or tutorials to complete with the assigned reading. You are expected to complete homework assignments and come prepared to participate in class. The homework is intended to be practice of the concepts and ideas covered in class and in the text. You are strongly encouraged to work on them alone and seek assistance only when you get stuck.

Homework should be done nightly. If there is no homework assigned (rare), then you should review in order to reinforce the topics covered in class each day.

Students are allowed 1 late homework grade per semester for a maximum reduced grade of 70%. In order to receive late credit, the late homework assignment MUST be turned in no later than the day after it was originally due or it will NOT be accepted at a later time. Completion of homework is very important to success in this course; therefore, no exceptions to this policy will be made other than those situations where attendance is a factor. Additional late or misplaced (locker, home, etc.) homework assignments will NOT be accepted.

Labs and Projects

Twenty-five to thirty-five percent of the time in this course is spent in laboratory; therefore, each week students will spend at least 2 periods per week performing a variety of lab activities. The activities range from observational labs such as microscopy and dissection to advanced labs from the AP Biology Lab Manual for Students and also ones which require students to design procedures to answer laboratory based questions.

All lab work should be kept your laboratory manual. Periodically, you will be required to turn in formal reports, for which you will be given advanced notice.

A pre-lab report will be due within the first 10 minutes of class on the day that the experiment is to be performed and will count for 5 points. If you fail to complete the pre-lab on time, you will receive a zero for the that pre-lab, but you must still complete the pre-lab for the final report.

Labs will be done in small groups and students will share data with the class; however, laboratory work should reflect the work of the individual student and NOT the group. I expect students to abide by the school's Honor Code Policy with respect to completion of laboratory work in any form.

You must make up labs within one week of your absence. Labs made-up due to excused absences will retain the opportunity to receive full credit. If the schedule that I have selected for the make-up day is going to be a problem, then don't miss labs. You will know that a lab is coming because you will be doing a pre-lab to be turned in on that day.

We are limited on time during class and you may need to complete labs after school. If we will need after school time for a lab, you will be notified in advance. I***f a student is unable to participate in an in-class lab or a required after school lab, they must notify me as soon as possible prior to lab day and make arrangements to complete the lab at a different time. Failure to do so will result in a zero for the lab.***

Lab reports will be due one week after completing the experiment whether in class or on the make-up day. See report format below and example on a separate handout or on my web page.

Tests and Quizzes

Quizzes will cover information from class notes, handouts, lecture, reading assignments, and homework assignments. Often quizzes will be on a specific chapter of the book. Quizzes may be announced or "pop". Once you have had some practice on the quizzes I will begin imposing a time limit in order to simulate AP conditions.

In order to prepare for the AP test, the **tests** will be hauntingly similar to the AP test and many questions will be actual AP question from previous years' AP Exams. Each exam will consist of a number of multiple choice and free response questions. The "questions per minutes" standard of the AP Exam will be imposed in order to get you used to the stress.

There will also be questions on the exams based on the labs. The AP Exam includes questions covering experimental conditions and this is where you will get some of your practice with the material.

Research Paper and Literature Review

You will be give a topic on some biological feedback mechanism that you will need to research. Then you will find one research article related to that mechanism from a scientific journal. Your paper will be a summary of the topic and an abstract of the paper. An abstract is a summary or synopsis of an article in a journal or magazine. The purpose of preparing an abstract is to acquaint you with scientific literature and to expose you to current topics in biology. Articles must be chosen from science journals. The article should be at least 2000 words long and it should include experimental data and analysis. You can find good articles using the Galileo search provided by the media center. A copy of the article or journal will be due 6 weeks into the first semester. The paper (1000 words) will be due 9 weeks after the start of the school year and must be turned in to http://turnitin.com. A rubric will be provided for the paper at a later date. The paper will count as a test grade.

Final Exam

There will be a cumulative final exam given at the end of each semester. The first semester exam will cover chapters 1-19, 50, 52 &53 and the second semester final exam (AP Practice Exam) will cover the entire year of curriculum. The AP Practice Exam is mandatory and consists of all of the multiple choice and essay questions from a recent release of the AP Biology college board exam. The AP Practice Exam is tentatively scheduled after school on **Tuesday, April 24th**. The second semester final exam (AP Practice Exam) will count for 20% of the semester grade.

Units

The following is a projected outline of this semester's topics organized by unit and the approximate (~) unit test dates.

Topic	Time	Chapters	Test Date
Introduction & Ecology (Summer Assignment)	1 week	1,2,50,52,53	08/19/11
Biochemistry	< 2 weeks	3 - 5	~ 08/31/11
Cellular Structure & Metabolism	3 – 4 weeks	6 - 8	~ 9/16/11
Cellular Energy & Communication	3 – 4 weeks	9 - 11	~ 10/7/11
Cellular Reproduction & Mendelian Genetics	3 – 4 weeks	12 - 15	~ 11/4/11
Molecular Genetics, Viral & Bacterial Genetics, DNA Technology	3 – 4 weeks	16 - 18	~ 12/6/11
Eukaryotic Genomes (part 1)		19	No Test
Final Exam		1 - 19	~ 12/15/09
Eukaryotic Genomes (part 2) & Genetic Basis of Development		20, 21*	Winter Break

Lab Report

All labs will require you to read the lab beforehand and answer some question (prelab). While some labs will be completed in class, many of the required A.P. Labs will require a typed formal lab report. Formal labs will require the following:

Pre-Laboratory

- The 1st page of each new Lab activity should have the DATE of Lab in top lefthand corner and the name(s) of your LAB PARTNER(s) below the date in addition to:

- **TITLE**
- **INTRODUCTION:** Usually prelab questions or summary of lab concepts.
- **OBJECTIVES:** State specific objectives that you are being asked to perform in the lab, such as observe, analyze, determine, etc. and briefly describe HOW you will meet each objective. DO NOT COPY FROM THE LAB SHEET!
- **HYPOTHESIS** (when applicable) - This needs to be in "If..then: format and should address an educated guess on directly what you are doing in the lab. *If there is a CONTROL in this lab, the hypothesis should address this.* (Example: <u>If</u> crickets are placed in a temperature of 10°C <u>then</u> the length that they jump will be less than that of the control by 5 cm.) Note how specific this hypothesis is! This way, the conclusion can address the results specifically to the hypothesis.
- **MATERIALS**: LIST, in column format, all materials you will be using in the lab, be specific.
- **METHODS:** In your own words, paraphrase the <u>procedure</u> in 2-3 paragraphs. It is not necessary to give specific amounts and intricate details, just give a <u>summary</u> of what you are doing during experimentation. *For lab, each laboratory station will have a copy of the step by step procedures for precision purposes.*
- **DATA (results)**:
    - Tables: Before the lab use a ruler or a computer to draw in data tables for the recording of the results of experimentation. The data tables must be enclosed in a box and should have straight lines. Data tables must include the following: a title, column headings and the units for physical measurements (kg, m, s, etc.) clearly indicated in the appropriate columns. The columns and rows should line-up so that it is easy to read.
    - Observations: Leave plenty of space for descriptive data

Post Laboratory

- **GRAPHS (when applicable)** - All graphs should be line graphs (best fit line or standard curve); NO BAR GRAPHS unless otherwise instructed. *All graphs should have the following: Title, X-axis label, Y-axis label and a key. Using different colors or highlighting for data lines is acceptable.*

- **DISCUSSION (Results):** This is the section where you should thoroughly discuss the results of experimentation and what the data indicates (the meaning). It is not necessary to restate all of the data, the data is already in the data section. Therefore, restate only what is important in YOUR discussion. Discuss your graphs – they are always important. <u>Calculations</u>: If calculations are required, they should be the first item in the Discussion section.

- **CONCLUSION:** This should be a minimum of 8 sentences long. The conclusion is where you demonstrate what was accomplished in the lab. Your conclusion should always answer the following questions, in order:
    1. Were the objectives met (all labs) and was the hypothesis supported by the data (some labs)? *Explain why or why not. Be specific.*
    2. What did you learn from the lab? *Be specific, provide details about the theory, principles and/or procedures as it relates to your learning. You can also relate the experimental findings to your learning/understanding. However, you should NOT discuss DATA and the meaning of it. That should be done in the discussion section. I will NOT give you credit for data discussion in the conclusion section.*
    3. Did anything occur in the course of the lab that might have affected or changed the results? *Explain what happened and how this event may have altered the results.*
    4. What could you do to extend this lab or change it?

- **Analysis**: All questions must be written out and a thorough answer should be given.

Class Rules

- Obey ALL school rules.
- Bring all required materials to class everyday.
- Be on time to class. I count tardies; therefore, be aware of the Tardy policy at all times.
- Place bookbags and purses underneath your chair/desk during class. These items are not allowed to be on your desk or in your lap.
- Do NOT get out of their seat without permission for any reason, it is rude to do so.
- Do NOT talk when the teacher or a quest speaker is talking, it is rude to do so.
- Use the restroom on your own time; passes to the restroom during class are *rarely* given in my class!
- Be respectful of teachers, other students, and their respective property.
- Do NOT use any audio devices such as ipods, cd players, radios, mp3 players, etc. in class at anytime – no exceptions. These items should be turned off and be out of sight at all times.
- Do NOT use cell phones during class or on campus during school hours. Cell phones should be turned off and concealed while on campus. Consequence: Failure to follow this rule will result in confiscation of the cell phone by any member of the faculty & staff. *This is school policy!*
- Do NOT eat or drink anything except *pure* bottled water in my room. That means, no food, gum, candy or drinks *except bottled water* are allowed in class. Consequence: *Students caught with food/drinks in class will automatically given a 30 minute private detention and those items will be thrown away.*
- General Consequences: Failure to follow any of these class rules will result in contact with parent(s) and/or one or more of the following depending upon the severity of the situation: 1) warning 2) private detention 3) formal disciplinary report along with a trip to the appropriate administrator.

Laboratory Rules

- Follow all of the laboratory safety rules. Laboratory rules are outlined in the *Safety Contract* provided to each student. *For example, goggles must be worn when instructed by your teacher.*
- Do NOT play around during lab activities.
- Clean up your lab area before leaving lab. This includes returning lab materials and chairs etc. to the proper place. Failure to clean up will result in loss of points on the lab.
- Consequences: 1st offense - verbal warning, 2nd offense - 30 minute private detention. 3rd offense - Confiscation of Laboratory handout, sit out the remainder of the lab and referral to appropriate administrator.

Policies and Procedures

1. Tardies: Students are expected to be in their assigned seat before the tardy bell rings. Students will not be allowed into class after the tardy bell rings without a tardy pass from the attendance office. Tardies are tracked by Administration and will result in disciplinary action.

2. Make-up Policy: *Students who need to make-up Tests, Quizzes, and Labs should see Mr. Wolfe.*

- **Students are expected to take scheduled tests even if they are absent the day before the test.**
- **Students who are absent the day of a test are expected to take the test upon return to school.**
- All tests MUST be made up within 2 school days of an absence (except in exceptional cases where the Fulton county make-up policy is better for the student) or a grade of "zero" will be given.
- Assignments made prior to a full day absence and due on the day the absence occurs will be due upon the student's return to school. In addition, students who are present for any portion of the school day are expected to turn in all assignments due on that day in order to receive full credit for the assignments.

3. Late Work (except homework): Any graded assignment *other than homework* that is turned in late will have 10 points per day deducted from the grade received on the assignment.

4. Extra Help: I am always available to help you succeed in the class. Please see me for advice or help sessions.

5. Honor Code (plagiarism and Cheating):

- Although students are allowed to collaborate (*Collaboration: working together towards a common goal*) during many class activities, each student is ALWAYS responsible for completing their own work. Therefore, Plagiarism and Cheating will NOT be tolerated.
- Plagiarism is defined as follows:
  - Using the work of another student as your own, i.e. copying another students's homework, laboratory work, composition, or project.
  - Using excessive editing suggestions of another student, parent, teacher, or paid editor.
  - Using words or ideas from a published source without proper documentation.
- Cheating on any assignment will NOT be tolerated. Cheating is defined as follows:
  - Glancing at or viewing another students test or quiz paper.
  - Copying (see plagiarism) another student's work.
- Students may be asked to submit certain assignments through an internet program called TurnItIn.com. This program gives students the opportunity to review their own writing and correct possible plagiarism errors, thereby not violating the Honor Code.
- Consequences: Students who are caught plagiarizing or cheating will receive a zero for the assignment and an honor code violation. I will complete an honor code violation form which "may be used by the faculty in making future recommendations, specifically memberships in honor clubs."

6. Technology Code of Ethics: According to the Fulton County Schools policy "students shall not alter or attempt to alter school or private property including technology hardware and software."This includes: a) changing desktop settings or control panels b) removing or damaging mouse tracking balls, keys, cables, connectors, network jacks, or any other hardware c) modifying computer software d) damaging computer disks, CD-ROMS, or other media.

7. Provision for Improving Grades (recovery):

- 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.
- **CHATTAHOOCHEE HIGH SCHOOL GUIDELINES:** Recovery is available to students with a cumulative grade **below 74%** after a minimum of two (2) major grades. The maximum grade a student can earn for a recovery activity is 70%. There will be only one recovery opportunity per failed major assignment/test. The individual teacher will determine the means of recovery. **THE STUDENT MUST INITIATE THE PROCESS WITHIN FIVE (5) DAYS OF NOTIFICATION OF A FAILING GRADE ON A MAJOR ASSIGNMENT/TEST**
- ***Teacher's Note:*** *I follow this policy EXACTLY as it is written. This policy is intended to help students be successful when they have put forth all of the effort required of them and they still struggle; this policy is NOT intended for students who do NOT routinely do their work throughout the semester, do NOT give all of the effort required of them and then request recovery in order to help them pass the course in the final days of the semester.*