AP PHYSICS B SYLLABUS

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ROOM: H112
EXAM DATE: Monday May 10, 2010

COURSE GOALS AND OVERVIEW

The AP Physics B course provides a systematic development of the main principles of physics, emphasizing problem solving and helping students develop a deep understanding of physics concepts. It is assumed that the students are familiar with algebra and trigonometry. The course is designed to be equivalent to a college course that provides a foundation in physics for students in life sciences, premed, and other fields not directly related to science. The course also includes a laboratory component constituting a minimum of 20% of instructional time. Students are encouraged to keep copies of their laboratory work for use in determining college credit or placement (http://apcentral.collegeboard.com)

CONTENT OUTLINE: PERCENTAGES REPRESENT GOALS FOR THE AP EXAM

I. Newtonian Mechanics	35%
II. Fluid Mechanics and Thermal Physics	15%
III. Electricity and Magnetism	25%
IV. Waves and Optics	15%
V. Atomic and Nuclear Physics	10%

(http://apcentral.collegeboard.com)

TIME REQUIREMENT

1. At least 250 minutes per week.
2. A minimum of one lab per week or equivalent
3. Students should spend at least 5 hours a week in individual study outside of the classroom.

SCHOOL RESOURCE REQUIREMENTS

- A college-level physics textbook for the teacher and each student
- Each teacher and the students have access to the *AP Physics Teacher's Guide and the 2004 AP Physics B Released Exams.*
- Access to materials, equipments, and time adequate to conduct college-level physics investigations outlined in the teachers guide.

TEXTBOOK

Walker, James S., 2007. ***Physics***, 3rd edition. San Francisco, CA: Pearson Education, Inc. (Replacement Cost: $108.97)
College Board. ***AP Physics Teacher's Guide and the 2004 AP Physics B Released Exams.***

EVALUATION

Exams	50%
Labs	15%
Quizzes	10%
Homework	5%
Final	20%

Grading Scale: A: 90 – 100 B: 80 – 89 C: 70 – 79 F: 0 – 69

Quizzes many be unannounced and not given at the same time as other periods. This prevents unfairness to earlier classes when later period have time to cram before their "pop" quiz.

LABORATORY

On average the class will participate in lab once a week. Two to four students will work together on each lab. The laboratory grade is based on pre-laboratory assignments, participation, lab write-ups, and lab quizzes. Each student is required to keep a laboratory portfolio of all labs completed.

COURSE PLANNER

NUCLEAR PHYSICS & RADIOACTIVITY *Chapter 29 & 30*	Nuclear Structure Mass Defect Nuclear Binding Energy Radioactive Decay Fusion & Fission
KINEMATICS *Chapters 2 & 3*	Displacement, Velocity, & Acceleration Motion in One Dimension Motion in Two Dimension Projectile Motion
NEWTON'S LAWS OF MOTION *Chapter 4*	Static Equilibrium Dynamics System of Two or More Objects
WORK, ENERGY, AND POWER *Chapter 5*	Work-Energy Theorem Potential & Kinetic Energy Conservation of Energy Power
MOMENTUM AND COLLISIONS *Chapter 6*	Momentum and Impulse Conservation of Momentum Inelastic and Elastic Collisions
CIRCULAR MOTION AND GRAVITY *Chapters 8 & 14*	Uniform Circular Motion Torque and Rotational Statics Law of Universal Gravitation Simple Harmonic Motion Mass on a Spring Pendulum and other Oscillations Orbits of Planets and Satellites

FLUIDS *Chapter 9*	Buoyancy Viscosity Bernoulli's Equation Archimedes' Principle Pascal's Principle
THERMODYNAMICS *Chapters 10, 11 &, 12*	Heat Transfer Ideal Gas Law Laws of Thermodynamics
ELECTROSTATICS *Chapters 15 & 16*	Electric Charge Coulomb's Law Electric Field Electrical Potential Energy Potential Difference Capacitance
CIRCUITS *Chapter 17 & 18*	Current Resistance Power Series, Parallel, Combination Resistance Circuits Steady State Capacitor Circuits
MAGNETISM & ELECTROMAGNETISM *Chapters 19, 20, & 21*	Magnetic Fields Current Carrying Wires Forces on Moving Charges in Magnetic Fields Electromagnetic Induction Faraday's & Lenz's Laws
WAVES & SOUND *Chapters 13 & 14*	Types of Waves Interference and Diffraction Superposition Doppler Effect Sound Intensity Resonance Harmonics
OPTICS *Chapters 22, 23, & 25*	Electromagnetic Waves Flat Mirrors Concave Spherical Mirrors Magnification Convex Spherical Mirrors Refraction & Snell's Law
ATOMIC PHYSICS *Chapter 24, 27 & 28*	Photons Photoelectric effect Compton's scattering Wave-Particle duality De Broglie wavelength
REVIEW for AP EXAM	All topics

EXPECTATIONS

1. Use appropriate and nonoffensive language.
2. Arrive promptly with needed materials, and stay on task until excused by the teacher.
3. Remain seated and listen attentively while others are speaking.

CLASS WEBSITES

This class has a website where class information may be obtained. At the class website students can find the course syllabus, assignments, worksheets, and other pertinent information. Most everything I handout in class can be found on the website. Two other useful websites are the online textbook and WebAssign. WebAssign is an online homework site that offers students a few chances to work a correct answer. However, there is a cost ($10) associated with this site. Students who opt not to partake in WebAssign must turn in the homework with all its associated work. In this case the student has only one opportunity to answer each question correctly. Below are the links to the class website, textbook and WebAssign.
www.geocities.com/jakspiel (Class website)
www.webassign.net (WebAssign homework)

ABSENCES AND MAKEUP WORK

- Missing school is bad enough, but the #1 reason for low grades is failure to turn in assignments. If you are absent the day an assignment is given, you have no more days extra than the number of days you missed to submit that assignment. For example, if you are absent three consecutive days, then you have three days to turn in the assignment once you return to school.
- Any previously assigned work will be due as usual. If you are absent the day the assignment is due, be sure to bring it with you the day you return.
- Late work is not accepted.
- Make-up is your responsibility.
- Missed laboratories will be rescheduled on the following Tuesday morning. TEST MAKE UP: If a test or quiz is missed due to an excused absence, you must take that test or quiz (likely a different version than what your peers took with the bonus question omitted) within the number of days of the absence.
- All makeup work is due two weeks prior to the semester's end.

CHEATING

All C.H.S. faculty, support a strong policy against cheating. Cheating is defined as "giving or receiving, in any form, information relating to a gradable experience, either inside or outside the class." Students guilty of cheating will receive a grade of zero on the assignment or test. Also, the honor code violation will be documented and filed in the office, possibly jeopardizing any future consideration for memberships in honor clubs.

TECHNOLOGY CODE OF ETHICS

According to the Fulton County schools policy "students shall not attempt to alter school or private property including technology hardware or software." This includes:

- -Changing desktop settings or panels on computers.
- -Removing or damaging mouse tracking balls, keyboard keys, cables, connectors, network jacks, or any other hardware.
- -Modifying computer software.
- -Damaging computer disks, cd-roms, or other media.

Provision for Improving Grades

1. 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.
2. Teachers will determine when and how students with extenuating circumstances may improve their grades.

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 or 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.**

TEXTBOOK

Any textbook turned in without the Fulton County barcode sticker on the inside cover of the book will result in a fine. The student will be charged the replacement cost for the text.

Student's name: _____

Period: _____

Please sign and date below indicating that you have reviewed the AP Physics B syllabus.

Student:

	9/8/09
(Signature)	(Date)

Parent:

	9/8/09
(Signature)	(Date)

Parents: Chattahoochee has a program called Parent Connect that allows you to view your child's academic progress and attendance over the internet. Register for Parent Connect through the front office.

The best way to get a hold of me is by email. If you have an email address that you are willing to share, please include it below.

_____

(Parent's email)

Thank you.

Jaclyn Murray
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