

ADVANCED PLACEMENT PHYSICS 1 COURSE REQUIREMENTS & GENERAL CLASSROOM PROCEDURES

Dear Students and Parents/Guardians:

I would like to extend a warm welcome to you and your parents. I think you will find the course challenging and fun.

In order to make this school year more successful and enjoyable, I would like to briefly state some general objectives, course requirements, and general classroom procedures.

I. What is the Advanced Placement Program?

1. It is an academic program of college-level courses and examinations for secondary school students. The College Board sponsors the Advanced Placement Program.
2. The AP Physics gives students the opportunity to pursue college-level studies while still in high school and to **possibly receive college credit.** Over 1200 colleges and universities in the nation offer AP and /or specific college credit to AP students who score at a certain level on the AP exam. **There is no guarantee that a student will receive college credit from the college or university of their choice, even if the student scores the highest possible score on the AP exam (5).** They need to check with the college or universities to see if they will receive credit for AP Physics.
3. A typical AP course is a special learning experience that takes a full academic year. The curriculum of an AP course is challenging and requires more effort and homework on the part of the student than a regular or honors high school course. It gives greater opportunity for individual progress and accomplishment and goes into greater depth with the academic material of each individual course.
4. Course content and formal scholarship is the essential objective toward which each student strives. Perhaps the real educational value of this program is that students develop critical thinking skills, fluid writing abilities, problem-solving skills and expertise in absorbing masses of material. AP students learn to deal with strenuous traditional academic settings and ultimately achieve at levels they never imagined possible. These skills are transferable to all subject areas.
5. Graduates of AP courses state that they have acquired formal education not only in course content, but also in academic organization, discipline and self-confidence which enables them to compete with, or outperform, non-AP students in college from all over the nation.

II. Goals:

1. To help students develop conceptual understanding of physical principles, the ability to reason, and problem-solving skills.
2. To help students see that physics is a wonderfully integrated body of knowledge.
3. To show students that physics principles come into play repeatedly in their lives.

III. Course Syllabus for the AP Exam

- A. Newtonian Mechanics
 - a. Kinematics: motion in one and two dimensions
 - b. Newton's laws of motion: Static equilibrium, dynamics, and systems of two or more objects
 - c. Work, energy, and power: Work-energy theorem, conservative forces, potential energy, conservation of energy
 - d. Linear momentum: Impulse and conservation of linear momentum
 - e. Circular motion and rotation: Uniform circular motion, torque, and rotational kinematics and dynamics
 - f. Oscillations and gravitation: Simple harmonic motion, pendulums, springs, Newton's law of gravity, and planetary orbits
- B. Waves and Optics
 - a. Wave motion (including sound): Properties of traveling and standing waves, Doppler effect, superposition
- C. Electrostatics and Electric Circuits
 - a. Electrostatics: Electric charge, Coulomb's law
 - b. Electric circuits: Current, resistance, voltage, power, and direct current circuits.

IV. Grading

1. Tests: 50% of the grade
2. Labs: 25 % of the grade
3. Homework: 25 % of the grade

TESTS: all tests will be of equal value. A minimum of 3 tests will be given each nine weeks. Most tests will cover 1 unit (approximately every 5 – 10 classes). Approximately 80% of each test will cover the material that was covered in class since the previous test and the remainder of the test will cover previous material. Each test will be divided into two sections, a multiple choice section and a free-response section, just like the AP Exam. The students may use a calculator (NO OTHER ELECTRONIC DEVICES WILL BE ALLOWED ON TEST) and equation sheet for both parts of the test. The date of the tests will be known in advance; therefore, any student missing the day of a scheduled test will be expected to take it the following day. The A.P. Physics exam is **in May**. All A.P. Physics 1 students will be encouraged to take the A.P. Physics 1 exam.

LABS: will be done in-groups of 2, 3, or 4 students, but each individual in the group is responsible for construction of his/her own lab report, using the rules outlined in the beginning few days. If at all possible, a lab should not be missed, but in the event of this occurrence, it is the student's responsibility to check with me to set up a time to make up a lab. The Lab Report format will be given to the students and reviewed prior to the first lab. Lab reports not turned in on time will be reduced by 25% per day late.

HOMEWORK: assignments will be checked for completeness and a certain degree of accuracy. It is very important to keep up with homework assignments, to be successful; a student must practice physics by doing the homework. Homework assignments will be checked and/ or collected on nearly a daily basis. Late homework assignment grades will be reduced by 25% per day. Quizzes maybe given occasionally. Notebooks will be checked throughout the quarter. Class participation will be part of the homework grade. One homework grade may be drop each nine weeks.

If a student has an excused absence, he/she will have as many days to make up the work as he/she was absent.

V. General Requirements:

1. All students are required to bring to class AT ALL TIMES, the following: Chromebooks, composition notebook, pen or pencil. A scientific **calculator** is optional since there is one on the Chromebooks.
2. It is the responsibility of the student to make up any work or obtain any assignments missed because of an absence or approved field trip. Everything we will do in class except labs will be on Google Classroom. Students that need to make up missed classroom work, labs or help, will need to schedule a time with me. I will be available from 1:35 – 2:20 (except on Wednesdays) in the afternoon to make up missed classroom work, to make up labs and to get help.

VI. Classroom Requirements and Procedures:

1. Students need to be Prompt, Respectful, Independent Thinkers, Dedicated, and Engaged.
2. Each student should be prepared with all necessary materials and in the room by the time the tardy bell rings. Class will start immediately after the tardy bell with class work.
3. Raise your hand to be recognized and to speak.
4. If you are late to class, place your pass on my desk and sit in your seat without disturbing the class and begin to work.
5. Hall passes are to be used for emergencies ONLY! You are expected to make every effort to use the rest rooms during the time provided before class.
6. The use smart phones, will not be permitted during class time.
7. In Lab, you will be responsible for cleaning up your lab station and returning your lab equipment to its proper place.
8. Food or drink may not be brought to the classroom except water.
9. No cheating - Any self-aids not specifically designated as permissible by the classroom teacher or the appearance of giving or receiving help during a quiz, test, or exam will result in an **AUTOMATIC FAILURE FOR THAT PARTICULAR ASSIGNMENT OR TEST !!**

VII. Syllabus

Topics

Scientific Method and Constant Velocity: 7 classes
Constant Acceleration: 8 classes
Net Force I: 9 classes
End of 1st Quarter

Net Force II: 8 classes
Work and Energy: 8 classes
Impulse and Momentum: 6 classes
End of 2nd Quarter

Topics

Projectile Motion: 5 classes
Circular Motion and Gravity: 6 classes
Rotational Motion and Angular Momentum: 6 classes
Simple Harmonic Motion: 5 classes
End of 3rd Quarter

Waves and Sound: 6 classes
Electrostatics and Electric Circuits: 12 classes
End of 4th Quarter

I will be available for help after school from 1:35 – 2:20 (except on Wednesdays). **IT IS VERY IMPORTANT THAT YOU SEEK HELP AS SOON AS YOU DISCOVER THAT YOU ARE HAVING DIFFICULTY WITH THE COURSE.**

Thank you for your cooperation. May you have a most enjoyable school year!!

Sincerely,

Jim Johnson
jameswjo@leeschools.net

I would like both the student and the parent/guardian signature in the appropriate space below and return this page only to me by the 3rd class.

A.P. PHYSICS

Student's Signature: _____

Parent/Guardian's Signature: _____

Date: _____