AP Physics 1 Course Syllabus

2023-2024

Course Overview:

The AP Physics 1 course is designed to align with a first semester college-level, algebra-based physics course. Because the course is taught over an entire school year rather than a single semester, the students will have the opportunity to discuss the topics in depth, as well as perform hands-on activities to help facilitate learning and understanding.

Course goals include developing insight, creativity, and exploratory skills to do the following:

(abbreviated from the 2008-2009 College Board AP Physics course description)

· Read, understand, and interpret physical information

· Use the scientific method to analyze a particular physical phenomenon or problem

· Use basic mathematical reasoning in a physical situation or problem

· Perform experiments, interpret the results of observations and communicate results, including uncertainty assessment

The course consists of 7 units (listed below) with a test given at the end of each quarter, with quizzes given every few classes throughout the quarter. Homework will be given daily, as practice problems done in class, problems from the book, or both. Labs will be done throughout the school year, and a lab report is required upon completion.
Classes will be 82 minutes each, which will include content, demonstrations, and lab work.

Textbook:

Review, Princeton. Princeton Review Cracking the Ap Physics 1 & 2 Exams, 2015 Edition. S.l.: Random House, 2014. Print.

Course Outline:

The following is an outline of course topics

Unit 1: Kinematics

- Distance/displacement
- Speed/velocity
- Acceleration
- Measurements
- 1-d motion

- Projectile motion

Unit 2: Dynamics
- Mass
- Force
- Newton's laws of motion

Unit 3: Gravitation and circular motion (lab class)
- Newton's law of gravitation
- Circular motion o Horizontal o Vertical

Unit 4: Work, Energy, Power
- Work
- Energy
- Power

Unit 5: Linear Momentum
- Collisions

Unit 6: Simple harmonic motion (Lab class)
- Pendulums/Springs
- Hooke's law

Unit 7: Torque and Rotational motion
- Torque
- Rotational equilibrium
- Rotational dynamics

Required materials:
- Notebook
- Pens/pencils/erasers
- Calculator, either graphing or scientific
- Chromebook/charger

Classroom rules/expectations:
1) Cell phone policy:
    a) Cell phones are **not** permitted to be out during class time, UNLESS they are specifically being used for a lab.
    b) If a student is using a phone in violation of this policy, a warning will be given. After three warnings on any given day, an email will be sent home. If after three

emails no change has been made, a referral will be written. This is done on a rolling basis, so an email will be sent after every three warnings, and a referral after every three emails. The warning count “refreshes” each day.

c) I reserve the right to confiscate phones in accordance with the NPCSD code of conduct and New Paltz High School student handbook.

2) Chromebooks: Chromebooks may be used to take notes, and will be used to collect lab data, complete AP Classroom assignments, etc. Students are not permitted to use the chromebook outside of these purposes. If a student is seen using a chromebook out of compliance with this policy, emails will be sent home, and if the behavior continues, a referral will be written. The frequency of emails and referrals will follow the cell phone policy.
3) Food/ drink:
    a) Food is not permitted to be consumed in the classroom. If the student needs to eat, they may step out into the hallway to eat quickly, with permission from the teacher.
    b) Drinks are allowed as long as the top can be covered with a lid.
4) Attendance: As this is an AP course, a lot of material gets covered fairly quickly. It is important that students are in class, on time, every day. If tardiness starts to become habitual, an email will be sent home, followed by a referral if the behavior continues. The frequency of emails and referrals will follow the cell phone policy. If a student is late because they were meeting with a teacher, the student is expected to bring a signed pass with them to class.
5) Classwork: Classwork will primarily consist of homework, labs, and tests/quizzes.
    a) Homework will be in the form of practice questions, work on AP Classroom, etc.
    b) Quizzes will be given every few blocks to assess learning from the previous unit.
    c) Labs will be done throughout the year. They will consist of collecting and analyzing data, answering questions, and completing a write up.
6) Grading: Grading will be done on a points-based system. Your grade is determined by how many points you have earned divided by the number of points available. Homework assignments will have two grades show up in the gradebook, the assignment itself and a separate completion grade. The completion grade will include a timeliness aspect, so the completion grade will be affected if you turn in the assignment late.