AP PHYSICS 1 **COURSE SYLLABUS** **K. Cannon**

AP Physics 1 Course Overview

AP Physics 1 is an algebra-based, introductory college-level physics course that explores topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. Through inquiry-based learning, students will develop scientific critical thinking and reasoning skills. The course includes basic use of trigonometric functions. Students should have completed geometry and be concurrently taking Algebra II or an equivalent course.

AP Physics Exam Date: Friday, May 16, 2025; 8am

Course Content

Students explore principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. The course is based on six Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. The following are Big Ideas:

- •Objects and systems have properties such as mass and charge. Systems may have internal structure.
- •Fields existing in space can be used to explain interactions.
- •The interactions of an object with other objects can be described by forces.
- •Interactions between systems can result in changes in those systems.
- •Changes that occur as a result of interactions are constrained by conservation laws.
- •Waves can transfer energy and momentum from one location to another without the permanent transfer of mass and serve as a mathematical model for the description of other phenomena.

Science Practices

Students establish lines of evidence and use them to develop and refine testable explanations and predictions of natural phenomena. Focusing on these disciplinary practices enables teachers to use the principles of scientific inquiry to promote a more engaging and rigorous experience for AP Physics students. Such practices require that students:

- •Use representations and models to communicate scientific phenomena and solve scientific problems
- •Use mathematics appropriately
- •Engage in scientific questioning to extend thinking or to guide investigations
- •Plan and implement data collection strategies in relation to a particular scientific question
- •Perform data analysis and evaluation of evidence
- •Work with scientific explanations and theories
- •Connect & relate knowledge across various scales, concepts, & representations in & across domains.

Course Topics

- Kinematics
- Forces & Translational Dynamics
- Work, Energy, Power
- Linear Momentum
- Torque & Rotational Dynamics
- Energy & Momentum of Rotating Systems
- Oscillations
- Fluids

A more detailed description of the course and the AP Exam can be accessed at the website below:
https://apstudent.collegeboard.org/apcourse/ap-physics-1

Course Textbook and Resources

Knight, R. *Physics for scientists and engineers: A strategic approach*, 4th ed., Pearson Education, Inc. (2017) (Cost = $124.38)

All students are issued a district-provided chrome book for instructional purposes, student engagement, and student learning. Chrome book use is at the direction and discretion of the classroom teacher.

Required Materials: 3-ring binder Paper (Lined & Graph) Scientific calculator (TI-30) Pencil & Pen

Recommended Materials: Notebook Dividers (10) Highlighters/Colored Pencils

Grading: Grades will be updated weekly and available to parents and students via the infinite campus parent portal. Students and parents should check grades regularly. The *Semester Average* will be determined as follows:

Major Assessments	**45%**
Minor Assessments	**20%**
Daily Work	**15%**
Final Exam*	**20%**

*This course includes a full-length College Board cumulative exam at the end of each semester.

Honor Code: Assignments or tests containing material copied from another student will receive NO CREDIT. Students who willingly allow others to copy their work or answers also will receive NO CREDIT. Parents/guardians will be notified should their student lose credit for any class grade due to an honor code violation.

Procedures and Expectations:

Students are expected to adhere to the VHS Student Code of Conduct at all times

Classroom Behavior

- Arrive ready for class (notebook, pencil/pen, homework); actively participate in class and lab every day.
- Treat everyone with respect. Be polite toward the teacher and your classmates.
- Food and drink are not permitted (except water in closed containers in the classroom).
- Take pride in the class and lab by helping to keep it clean.
- BYOD: Electronic devices may be visible/used ONLY on days when the teacher grants permission.

Attendance

- Students should make every effort to be in class every day. If absent**, it is the student's responsibility to obtain missed assignments/notes from a classmate or teacher**. See the missing assignment crate in the classroom.
- An absence the day before an assignment deadline or announced test DOES NOT warrant an extension.
- If a test is missed, it is the student's responsibility to schedule a day to make-up the test within 5 school days. Make-up tests will be given during SOAR or after school. If a lab is missed, it will be the teacher's discretion if an alternate assignment or make-up lab is provided.
- If you are not in the classroom when the bell rings you will be marked tardy. Disciplinary action for tardies will follow the student handbook.

Consequences

- Minor disruptions/infractions will receive warnings, conferences, and/or parent phone calls.
- Repeated minor offenses will result in detention to be served in room 1210 from 3:00 – 3:30. Be prepared to do homework or tasks assigned by the teacher.
- An office referral will occur for major disruptions/infractions, failure to serve assigned detention, or after repeated detention assignments.

Digital Learning

To encourage blended learning, online assignments and course resources will be posted in Canvas. Students should be familiar with how to navigate the online platform, communicate with their teacher, and submit assignments on time. Students should also bring their charged Chromebook to class every day. If there are technology limitations, please notify the teacher.

AP Classroom

Students should join the AP Classroom by Monday, August 5. Classroom instruction will be supplemented regularly through AP Classroom. Students will be expected to log-in on a weekly basis to complete assignments. These assignments will be posted in both Canvas and AP Classroom.

AP Classroom Join Code: _____

College Board Online Registration & Resources

AP Exam timeline:

- 8.25.24 – Deadline for students to electronically join all AP classes on College Board website (APcentral.collegeboard.org). *Help line for students and parents 1-888-225-5427
- ***Students must fix College Board issues. This can not be done administratively. ***
- 10.25.24 – Deadline for students to register for AP exams on the College Board website.

AP Expectations

I understand that I, as an advanced placement student, am responsible for registering online for my exams. Failure to do so will mean that I am unable to participate in AP testing for this course during the current school year.

The school is responsible for meeting College Board deadlines regarding testing registration. Once I have chosen to test/not test and submitted my registration through the College Board website, I am responsible for any fees incurred should I later change my decision.

"The function of education is to teach one to think intensively and to think critically. Intelligence plus character – that is the goal of true education."

~ Martin Luther King, Jr.

Course: AP Physics **Teacher: K. Cannon**

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PRINTED STUDENT NAME PERIOD

STUDEENT LAB SAFETY CONTRACT

General Lab Safety Rules

- Follow all written & verbal instructions as provided
- Wear proper eye/clothing protection at all times.
- Conduct yourself in a responsible & safe manner in the laboratory environment.
- Be knowledgeable of equipment, safety symbols, & techniques required for each lab.
- Know where/how to get help in an emergency, including the location of the first aid, safety shower, eye wash, fire extinguisher, and fire blanket.

Students must pass a lab safety quiz with an 80 or higher to be permitted to participate in lab activities.

I have read, understand, and agree to follow the lab safety rules outlines above, located in the lab safety materials, and any others provided in the future. I will conduct myself safely & appropriately at all times in the lab environment. I understand that failure to do so may result in not receiving credit for the lab and/or an office referral.

AP STUDENT ACKNOWLEDGEMENT

I understand that I, as an advanced placement student, am responsible for registering online for my exams. Failure to do so will mean that I am unable to participate in AP testing for this course during the current school year.

The school is responsible for meeting College Board deadlines regarding testing registration. Once I have chosen to test/not test and submitted my registration through the College Board website, I am responsible for any fees incurred should I later change my decision.

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STUDENT SIGNATURE DATE

PARENT ACKNOWLEDGMENT

I have read the information provided in the course syllabus and understand the policies, procedures, and expectations. I will support Mrs. Cannon's efforts to ensure my student is successful in this class. I acknowledge that my student must abide by the lab safety rules as outlined above and any others provided by Mrs. Cannon. I have contact information to communicate with Mrs. Cannon if needed:

Email: kristina.cannon@hcbe.net Phone (478) 218-7537, Ext. 64669

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PRINT PARENT NAME PARENT PHONE #

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PARENT SIGNATURE PARENT EMAIL

COMMENTS: _____