



## Syllabus for AP Physics

Teacher: Michael Burkett

**E-mail:** michael.burkett@biloxischools.net

**Class Information Website:** Google Classroom

The AP Physics 1 course is an algebra-based, introductory college-level physics course that will meet for 54 minutes every day. Students cultivate their understanding of physics through inquiry-based investigations as they explore these topics: kinematics, dynamics, circular motion and gravitation, energy, momentum, simple harmonic motion, torque, and rotational motion.

There are no prerequisite courses. Students should have completed Geometry and be concurrently taking Algebra II or an equivalent course. Although the Physics 1 course includes basic use of trigonometric functions, this understanding can be gained either in the concurrent math course or in the AP Physics 1 course itself.

This course requires that twenty-five percent of instructional time will be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to demonstrate the foundational physics principles and apply the science practices. Inquiry-based laboratory experiences provide opportunities for students to engage in science practices as they design plans for experiments, make predictions, collect and analyze data, apply mathematical routines, develop explanations, and communicate about their work. Colleges may require students to present their laboratory materials from AP science courses so students should retain their laboratory notebooks, reports, and other materials.

The AP Physics 1 Course has been designed by the College Board as a course equivalent to the algebra-based college-level introductory physics class. At the end of the course, students will take the AP Physics 1 Exam, which will test their knowledge of both the concepts taught in the classroom and through laboratory activities and their application of correct formulas to describe physical relationships.

### **The content for the course is based on six big ideas:**

Big Idea 1 – Objects and systems have properties such as mass and charge.

Big Idea 2 – Fields existing in space can be used to explain interactions.

Big Idea 3 – The interactions of an object with other objects can be described by forces.

Big Idea 4 – Interactions between systems can result in changes in those systems.

Big Idea 5 – Changes that occur as a result of interactions are constrained by conservation laws.

### **During this course, students will**

1. design and carry out experiments for collecting data to determine the relationships of concepts dealing with motion, forces, and energy.
2. determine the effects of changing variables dealing with motion, forces, and energy.
3. express an understanding of concepts dealing with motion, forces, and energy.

**Course Expectations:** You are expected to

- complete all work and attend class regularly.
- keep all class work throughout the term as your proof that the assignment was graded, checked and/or completed.
- study and to review notes daily in preparation for unit tests.
- ask questions about material/concepts you do not fully understand.
- actively participate in class discussions.
- apply course concepts to laboratory experiments and vice versa.
- keep up with your physics formula sheet and bring it and a calculator to class daily.
- take ownership and responsibility for your own learning and work.

**Course Supply List:**

1. Binder and paper or laptop (I'm going to be as paperless as possible.)
2. scientific calculator in class daily
3. Optional: Composition notebook for labs

**Grading Scale:**      A=90-100      B=80-89      C=70-79      D=65-69      F=below 64      I=Incomplete  
   **Tests: 55%**                      **Daily grades: 35%**                      **Term exam: 10%**

**Tests:** Tests are given after every major unit. Dates for tests will be posted on the board.

**Retesting:** Students will be able to retest on one test per term in accordance with school policy.

**Daily/Class Work/Homework:** Classwork/homework will consist of math problems, TIPERS questions, practice MC and FR questions, and lab reports. Homework will usually consist of short readings, videos, or workbook pages designed to prepare students for the next day in class. Longer-ranged assignments will also be assigned.

**Term Exam:** The term exam will typically be cumulative.

**Late & Makeup Work:** Work is due when it is due. Any late work turned in after the assignment has been returned to the other students will generally not be accepted, and you will have a blank grade that will be replaced with your original unit test grade. If you see that an assignment will not be completed on time, discuss this with me BEFORE the assignment is due as I usually have no problem working with you to extend the deadline. All district policies regarding missing work due to absences will be followed. Work assigned before an absence should be turned in when you return to school if it was due on the day you were absent. If you have been informed of a test prior to being absent, you are expected to take the test upon your return to school. Make-up tests will be given in class on the first available day upon your return. Any notes or materials used while you are absent will be in Google classroom.

**Days Available for Tutoring:** Tuesdays and Thursdays are the primary tutoring days. Let me know before the day of if you need to come in for tutoring. If you want to come in for extra help, I expect you to come prepared with specific things on which you need help and that tutoring takes priority over any extracurricular activities.

**COURSE SCHEDULE & DUE DATES:** Dates and times may change due to unforeseen circumstances.

Term 1: kinematics, force, energy, momentum

Term 2: situations involving kinematics, force, energy, and momentum

Term 3: situations involving kinematics, force, energy, and momentum

Term 4: situations and AP review

May 12: AP Physics 1 exam (Thursday PM)