

San Angelo Independent School District
Central High School
Advanced Placement Physics 1

Teacher:

Michael Terrill
michael.terrill@saisd.org
San Angelo Central Tucker 200

Conference Time: 8:20 am. – 9:09 am.

Tutorials:

Tuesday 7:40 am. & 4:09 pm.

Monday, Tuesday, Thursday, and Friday Bobcat Block

Other than on my parking lot duty day, Wednesday, I am in my classroom before 7:40 am., and any student is welcome at that time.

Materials needed daily:

- Chrome Book - Charged
- Pencil and eraser
- Lab Notebook – three-ring binder.

Course Description:

- AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through classroom study, in-class activity, and hands-on, inquiry-based laboratory work as they explore concepts like systems, fields, force interactions, change, and conservation.

Curricular Requirements:

- Students and teachers have access to college-level resources, including a college-level textbook and reference materials in print or electronic format.
 - AP Physics 1 digital classroom
 - College Physics: A Strategic Approach, Pearson digital
- The course provides opportunities to develop students' understanding of the required content outlined in each of the units described in the AP Physics 1 Course and Exam Description. Accessible through AP Classroom.
- The course provides opportunities for students to develop the skills related to:
 - Science Practice 1: Creating Representations.
 - Science Practice 2: Mathematical Routines.
 - Science Practice 3: Scientific Questioning & Argumentation.
- Students spend a minimum of 25% of instructional time engaged in hands-on laboratory investigations.
- Students engage in hands-on laboratory investigations representative of the topics outlined in the AP Physics 1 Course and Exam Description.
- The course provides opportunities for students to record evidence of their scientific investigations in a portfolio of lab reports or a lab notebook.

Instructional Plan:

- All topics listed in the current AP[®] Physics 1 Course and Exam Description will be covered in this course. The course will include these units of study:

UNIT 1

Kinematics

~12-17	Class Periods	10-15%	AP Exam Weighting
1	1.1	Scalars and Vectors in One Dimension	
2	1.2	Displacement, Velocity, and Acceleration	
3	1.3	Representing Motion	
1	1.4	Reference Frames and Relative Motion	
2	1.5	Vectors and Motion in Two Dimensions	
3			

UNIT 2

Force and Translational Dynamics

~22-27	Class Periods	18-23%	AP Exam Weighting
1	2.1	Systems and Center of Mass	
2	2.2	Forces and Free-Body Diagrams	
3	2.3	Newton's Third Law	
1	2.4	Newton's First Law	
2	2.5	Newton's Second Law	
3	2.6	Gravitational Force	
1	2.7	Kinetic and Static Friction	
2	2.8	Spring Forces	
3	2.9	Circular Motion	

UNIT 3

Work, Energy, and Power

~22-27	Class Periods	18-23%	AP Exam Weighting
1	3.1	Translational Kinetic Energy	
2	3.2	Work	
3	3.3	Potential Energy	
1	3.4	Conservation of Energy	
2	3.5	Power	
3			

UNIT 4

Linear Momentum

~10-15	Class Periods	10-15%	AP Exam Weighting
1	4.1	Linear Momentum	
2	4.2	Change in Momentum and Impulse	
3	4.3	Conservation of Linear Momentum	
1	4.4	Elastic and Inelastic Collisions	
2			
3			

UNIT 5

Torque and Rotational Dynamics

~15-20	Class Periods	10-15%	AP Exam Weighting
1	5.1	Rotational Kinematics	
2	5.2	Connecting Linear and Rotational Motion	
3	5.3	Torque	
1	5.4	Rotational Inertia	
2	5.5	Rotational Equilibrium and Newton's First Law in Rotational Form	
3	5.6	Newton's Second Law in Rotational Form	

UNIT 6

Energy and Momentum of Rotating Systems

~8-14	Class Periods	5-8%	AP Exam Weighting
1	6.1	Rotational Kinetic Energy	
2	6.2	Torque and Work	
3	6.3	Angular Momentum and Angular Impulse	
1	6.4	Conservation of Angular Momentum	
2	6.5	Rolling	
3	6.6	Motion of Orbiting Satellites	

UNIT 7 Oscillations	
~5-10	Class Periods 5-8% AP Exam Weighting
1 2 3	7.1 Defining Simple Harmonic Motion (SHM)
1 2 3	7.2 Frequency and Period of SHM
1 2 3	7.3 Representing and Analyzing SHM
1 2 3	7.4 Energy of Simple Harmonic Oscillators

UNIT 8 Fluids	
~12-17	Class Periods 10-15% AP Exam Weighting
1 2 3	8.1 Internal Structure and Density
1 2 3	8.2 Pressure
1 2 3	8.3 Fluids and Newton's Laws
1 2 3	8.4 Fluids and Conservation Laws

Grading:

District Grading Policy

Class Grading Policy:

Major Grades = 70%

Minor Grades = 30%

Minor Grades:

In-Class Assignments: Practice makes progress. If you are not keeping up with completing your assignments, you will fall behind quickly. Show all your work on Assignments. Showing your work helps you and me understand your thought process. In-class assignments will have a specific due date (usually the next day) and may be corrected or reattempted within one week of the due date. No assignments will be accepted after one week past the due date.

Quizzes and Practice Tests: Quizzes and practice tests are used to assess your current learning in the course. Quizzes and practice tests will have a specific due date (the same day) and may be corrected or reattempted within one week of the due date. No assignments will be accepted after one week past the due date.

Lab and Project: Labs and projects will be due the day after the lab or project concludes (some are multiple days). Missed labs will have a packet and worksheet covering the same information as the lab. Labs or projects must be made up within one week of the due date.

Major Grades:

Test: Tests will be completed in class. Being absent before the test date is not an excuse to not take the test. All test reviews are posted before the test, and notes are posted at the beginning of each unit.

Test Corrections: Test corrections must be turned in within one week of the test grade being posted. Test corrections include selecting the correct answer and at least four sentences on why the corrected answer is correct, why the answer was incorrect, or the student's thought process. Corrected items on the test will regain half of the original credit for that answer.

Notes and Lab Binder: Lab Notebooks are required by AP. A college you are applying to can request to see your Lab Notebook before granting you credit for this course. Students must maintain their Lab Notebook and keep it to be presented to the College or University they will attend. To help incentivize the importance of the Lab Notebook and taking class notes, I will collect and grade the Notes and Lab Binder at the end of each 9 weeks for a major grade.

Classroom expectations:

BEHAVIOR: All students are expected to follow the standards of behavior as outlined in the SAISD Student Code of Conduct and Central Student Handbook.

Electronic Devices: The Student Code of Conduct, in accordance with House Bill 1481, prohibits the use of electronic communication devices, including cell phones, smartwatches, wireless/bluetooth earbuds and headphones, paging devices, tablets, or gaming devices while on campus during the school day. Using - defined as out and visible School day - defined as the time from the first bell to the last bell of the day (including passing periods and lunch). On Campus - defined as the campus property

Hats and hoodies: Hats and hoodies will be removed from the head on entering the classroom and remain off. First offense, you will be warned. For a second offense, the item will be taken up for the duration of the class, and teacher detention will be assigned. Third, and more offenses, the item will be given to the principal's office, and a disciplinary referral will be submitted.

Entering and exiting class: My class has specific procedures for entering and exiting class. We will be reviewing and practicing these procedures on the first day of school, and students are expected to follow these procedures daily. These procedures are to expedite getting in and out of class and for student safety.

Class Safety: Class and lab safety is very important. We learn safety procedures in class. Safety violation consequences are directly related to intent. Accidents happen and are excusable. Accidents because of horseplay or intentionally are more serious. Purposely harming a person or damaging equipment will not be tolerated.

Bathrooms / Minga: Minga will be used for any time you need to leave the classroom. One student at a time is permitted to use the restroom during class time based on the current activity in the class.

Most Important:

Respect: We will respect and treat everyone in the class with dignity and as a valued member of the team. Disrespecting anyone in the class will not be tolerated and will result in consequences ranging from teacher detention to an administrator being called to the classroom to remove the student. Be nice and courteous to everyone in the class, and we will all have a great experience.