

**San Angelo Independent School District
Central High School**

Advanced Placement Physics 2

Teacher:

Michael Terrill

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San Angelo Central Tucker 200

325-659-3434 ext:256

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 2 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, conservation, and waves.

Curricular Requirements:

- Part of the Course will be delivered through digital learning platforms
 - [Schoology](#)
 - [AP Classroom](#)
- Students and teachers have access to college-level resources, including a college-level textbook and reference materials in print or electronic format.
 - [AP Physics 2 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 2 Course and Exam Description.
- 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 2 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 9 Thermodynamics	
~10-16 Class Periods	15-18% AP Exam Weighting
1 2 3	9.1 Kinetic Theory of Temperature and Pressure
1 2 3	9.2 The Ideal Gas Law
1 2 3	9.3 Thermal Energy Transfer and Equilibrium
1 2 3	9.4 The First Law of Thermodynamics
1 2 3	9.5 Specific Heat and Thermal Conductivity
1 2 3	9.6 Entropy and the Second Law of Thermodynamics

UNIT 10 Electric Force, Field, and Potential	
~14-21 Class Periods	15-18% AP Exam Weighting
1 2 3	10.1 Electric Charge and Electric Force
1 2 3	10.2 Conservation of Electric Charge and the Process of Charging
1 2 3	10.3 Electric Fields
1 2 3	10.4 Electric Potential Energy
1 2 3	10.5 Electric Potential
1 2 3	10.6 Capacitors
1 2 3	10.7 Conservation of Electric Energy

UNIT 11 Electric Circuits	
~12-20 Class Periods	15-18% AP Exam Weighting
1 2 3	11.1 Electric Current
1 2 3	11.2 Simple Circuits
1 2 3	11.3 Resistance, Resistivity, and Ohm's Law
1 2 3	11.4 Electric Power
1 2 3	11.5 Compound Direct Current (DC) Circuits
1 2 3	11.6 Kirchhoff's Loop Rule
1 2 3	11.7 Kirchhoff's Junction Rule
1 2 3	11.8 Resistor-Capacitor (RC) Circuits

UNIT 12 Magnetism and Electromagnetism	
~10-13 Class Periods	12-15% AP Exam Weighting
1 2 3	12.1 Magnetic Fields
1 2 3	12.2 Magnetism and Moving Charges
1 2 3	12.3 Magnetism and Current-Carrying Wires
1 2 3	12.4 Electromagnetic Induction and Faraday's Law

UNIT 13 Geometric Optics	
~8-12 Class Periods	12-15% AP Exam Weighting
1 2 3	13.1 Reflection
1 2 3	13.2 Images Formed by Mirrors
1 2 3	13.3 Refraction
1 2 3	13.4 Images Formed by Lenses

UNIT 14 Waves, Sound, and Physical Optics	
~14-23 Class Periods	12-15% AP Exam Weighting
1 2 3	14.1 Properties of Wave Pulses and Waves
1 2 3	14.2 Periodic Waves
1 2 3	14.3 Boundary Behavior of Waves and Polarization
1 2 3	14.4 Electromagnetic Waves
1 2 3	14.5 The Doppler Effect
1 2 3	14.6 Wave Interference and Standing Waves
1 2 3	14.7 Diffraction
1 2 3	14.8 Double-Slit Interference and Diffraction Gratings
1 2 3	14.9 Thin-Film Interference

UNIT 15 Modern Physics	
~14-22 Class Periods	12-15% AP Exam Weighting
1 2 3	15.1 Quantum Theory and Wave-Particle Duality
1 2 3	15.2 The Bohr Model of Atomic Structure
1 2 3	15.3 Emission and Absorption Spectra
1 2 3	15.4 Blackbody Radiation
1 2 3	15.5 The Photoelectric Effect
1 2 3	15.6 Compton Scattering
1 2 3	15.7 Fission, Fusion, and Nuclear Decay
1 2 3	15.8 Types of Radioactive Decay

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.

Make-up work and Late work policy

Minor Grades:

In-Class Assignments: 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 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: 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: I will collect and grade the Notes and Lab Binder four class days before the end of each 9 weeks for a major grade. Students will have until the last day of the 9 weeks to correct or submit their Notes and Lab Binder.

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.