

Calallen ISD 2025-2026**Syllabus – AP Physics 1****Campus:** Calallen High School**Course and/or Grade Level:** 9,10,11,12

Course Description: AP Physics is an algebra-based, introductory college-level physics course. 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, electric charge and electric force, DC circuits, and mechanical waves and sound. AP Physics 1 is a full-year course that is the equivalent of a first-semester college course in algebra-based physics.

Semester 1: August 13 – December 19, 2025

1st Quarter Topics	2nd Quarter Topics
○ Kinematics ▪ Scalars and Vectors in One Dimension ▪ Displacement, Velocity, and Acceleration ▪ Representing Motion ▪ Reference Frames and Relative Motion ▪ Vectors and Motion in Two Dimensions ○ Force and Translational Dynamics ▪ Systems and Center of Mass ▪ Forces and Free-Body Diagrams ▪ Newton's Third Law ▪ Newton's First Law ▪ Newton's Second Law ▪ Gravitational Force ▪ Kinetic and Static Friction ▪ Spring Forces ▪ Circular Motion	○ Work, Energy, and Power ▪ Translational Kinetic Energy ▪ Work ▪ Potential Energy ▪ Conservation of Energy ▪ Power ○ Linear 4 Momentum ▪ Linear Momentum ▪ Change in Momentum and Impulse ▪ Conservation of Linear Momentum ▪ Elastic and Inelastic Collisions

Semester 2: January 5 – May 29, 2026

3rd Quarter Topics	4th Quarter Topics
○ Torque and Rotational Dynamics ▪ Rotational Kinematics ▪ Connecting Linear and Rotational Motion ▪ Torque ▪ Rotational Inertia ▪ Rotational Equilibrium and Newton's First Law in Rotational Form ▪ Newton's Second Law in Rotational Form ○ Energy and Momentum of Rotating Systems ▪ Rotational Kinetic Energy	○ Oscillations ▪ Defining Simple Harmonic Motion (SHM) ▪ Frequency and Period of SHM ▪ Representing and Analyzing SHM ▪ Energy of Simple Harmonic Oscillators ○ Fluids ▪ Internal Structure and Density ▪ Pressure ▪ Fluids and Newton's Laws ▪ Fluids and Conservation Laws

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| <ul style="list-style-type: none">▪ Torque and Work▪ Angular Momentum and Angular Impulse▪ Conservation of angular momentum▪ Rolling▪ Motion of Orbiting Satellites | |
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