



ALLEN ACADEMY

AP Physics Course Description 2019-2020

First Trimester	Second Trimester	Third Trimester
<p>Unit 1 - Kinematics</p> <ul style="list-style-type: none">* Position, Velocity, and Acceleration* Representation of Motion <p>Unit 2 - Dynamics Systems</p> <ul style="list-style-type: none">* The Gravitational Field* Contact Forces* Newton's First Law* Newton's Third Law and Free-Body Diagrams* Newton's Second Law* Applications of Newton's Second Law <p>Unit 3 - Circular Motion and Gravitation</p> <ul style="list-style-type: none">* Vector Fields* Fundamental Forces* Gravitational and Electric Forces* Gravitational Field / Acceleration Due to Gravity on Different Planets* Inertial vs. Gravitational Mass* Centripetal Acceleration and Centripetal Force* Free-Body Diagrams for Objects in Uniform Circular Motion* Applications of Circular Motion and Gravitation	<p>Unit 4 - Energy</p> <ul style="list-style-type: none">* Open and Closed Systems: Energy* Work and Mechanical Energy* Conservation of Energy, the Work-Energy Principle, and Power <p>Unit 5 - Momentum</p> <ul style="list-style-type: none">* Momentum and Impulse* Representations of Changes in Momentum* Open and Closed Systems: Momentum* Conservation of Linear Momentum <p>Unit 6 - Simple Harmonic Motion</p> <ul style="list-style-type: none">* Period of Simple Harmonic Oscillators* Energy of a Simple Harmonic Oscillator <p>Unit 7 - Torque and Rotational Motion</p> <ul style="list-style-type: none">* Rotational Kinematics* Torque and Angular Acceleration* Angular Momentum and Torque* Conservation of Angular Momentum	<p>Unit 9 - DC Circuits</p> <ul style="list-style-type: none">* Definition of a Circuit* Resistivity* Ohm's Law and Kirchhoff's Loop Rule (Resistors in Series and Parallel)* Ohm's Law and Kirchhoff's Junction Rule (Resistors in Series and Parallel) <p>Unit 10 - Mechanical Waves and Sound</p> <ul style="list-style-type: none">* Properties of Waves* Periodic Waves* Interference and Superposition (Waves in Tubes and on Strings)



ALLEN ACADEMY

First Trimester	Second Trimester	Third Trimester
	<p>Unit 8 - Electric Charge and Electric Force</p> <ul style="list-style-type: none">* Conservation of Charge* Electric Charge* Electric Force	