

Honors Physics I – Course Overview

1st QUARTER:	2nd QUARTER:
<p>I. The Science of Physics A. What is Physics? B. Measurements in Experiments C. The Language of Physics</p> <p>II. Motion in One Dimension A. Displacement and Velocity B. Acceleration C. Falling Objects</p> <p>III. Two-Dimensional Motion and Vectors A. Introduction to Vectors B. Vector Operations C. Projectile Motion D. Relative Motion</p> <p style="text-align: center;">BENCHMARK I</p>	<p>IV. Forces and Laws of Motion A. Changes in Motion B. Newton's First Law C. Newton's Second and Third Laws D. Everyday Forces</p> <p>V. Work and Energy A. Work B. Energy C. Conservation of Energy D. Power</p> <p>VI. Momentum and Collisions A. Momentum and Impulse (No Rotational or Angular) B. Conservation of Momentum (No Rotational or Angular) C. Elastic and Inelastic Collisions (One-dimensional)</p> <p>VII. Circular Motion and Gravitation A. Newton's Law of Universal Gravitation B. Motion in Space</p> <p style="text-align: center;">BENCHMARK II</p>
3rd QUARTER:	4th QUARTER:
<p>VIII. Electric Forces and Fields A. Electric Charge B. Electric Force C. The Electric Field</p> <p>IX. Electrical Energy and Current A. Electric Potential B. Current and Resistance C. Electrical Power</p> <p>X. Circuits and Circuit Elements A. Schematic Diagrams and Circuits B. Resistors in Series or in Parallel C. Complex Resistor Combinations</p> <p>XI. Magnetism A. Magnets and Magnetic Fields B. Magnetism from Electricity C. Magnetic Force</p> <p>XII. Electromagnetic Induction A. Electricity from Magnetism B. Generators, Motors, and Mutual Inductance</p> <p style="text-align: center;">BENCHMARK III</p>	<p>XIII. Vibrations and Waves A. Simple Harmonic Motion B. Measuring Simple Harmonic Motion C. Properties of Waves D. Wave Interactions</p> <p>XIV. Light and Reflection A. Characteristics of Light B. Flat Mirrors C. Curved Mirrors D. Color and Polarization</p> <p>XV. Refraction A. Refraction B. Thin Lenses C. Optical Phenomena</p> <p>XVI. Interference and Diffraction A. Interference B. Diffraction C. Lasers</p> <p>XVII. Sound A. Sound Waves B. Sound Intensity and Resonance</p> <p>XVIII. Atomic Physics A. Models of the Atom - A Particle Model of Waves (Qualitative) photoelectric effect</p> <p style="text-align: center;">BENCHMARK IV</p>