

## Advanced Physics

<b>Text:</b>	<b><i>Holt Physics 2006</i></b>
<b>Supplemental Materials:</b>	Resource and laboratory activities from various sources
<b>Course Description:</b>	<p>Advanced college preparatory physics at SCPS is an algebra and trigonometry based course in mechanics, electricity, matter, waves, and modern physics. These principles are extensive in scope and cover a broad range of concepts, preparing a student for success in college science subjects. The goal of this class is to build a conceptual framework through experimentation and investigation while developing study and computational skills necessary to apply concepts in a scientific manner.</p> <p>This course is intended for strong math/science students in grade 9 to replace Conceptual Physics and for upper classmen to expand their understanding of conceptual physic or physical science.</p>
<b>Methods of Evaluation:</b>	Students are evaluated through objective tests, quizzes and laboratory reporting. Students also take a comprehensive exam at the end of both semesters. The tests, labs and activities of this class assess mastery of content, not effort.
<b>Pace of Instruction:</b>	<p>This course meets 45 minutes daily. A lab activity is performed on average once every two weeks, depending on unit topic.</p> <p><u>First Semester</u></p> <ul style="list-style-type: none"> <li>I. Math Skills – graphical, numerical, calculation</li> <li>II. 1 Dimensional Motion</li> <li>III. 2 Dimensional Motion</li> <li>IV. Motion and Forces</li> <li>V. Newtonian Motion</li> <li>VI. Rotational and Circular Motion</li> <li>VII. Momentum, Work, Power and Energy</li> </ul> <p><u>Second Semester</u></p> <ul style="list-style-type: none"> <li>VIII. Electrostatics</li> <li>IX. Current Electricity (DC circuits)</li> <li>X. Magnetism</li> <li>XI. Waves and Sound</li> <li>XII. Light - Refraction, reflection and diffraction</li> <li>XIII. Nuclear Physics</li> <li>XIV. Thermodynamics</li> <li>XV. Fluids</li> </ul>