

# Physics – Advanced Subsidiary GCE and Advanced GCE

## Course Synopsis

Physics at AS and A2 is a challenging, enjoyable course dealing with the fundamental principles that govern everything around us – from the behaviour of the smallest sub-atomic particles to the future of the universe itself. The course aims to develop essential knowledge and understanding and the ability to apply these in a wide variety of contexts. It is suitable for students who enjoy physics at GCSE level, who want to know more about how the physical world works and who have an aptitude for mathematics and problem solving.

Physics is an essential choice for anyone hoping to enter the fields of physical sciences, engineering and design. It is highly recommended for those wishing to study medicine, architecture or any other scientific or technical subject. As a qualification it is highly regarded worldwide by employers and higher education institutions, including those specializing in business, finance, management and law.

Further information can be found at: <http://www.edexcel.org.uk/quals/gce/physics/>

<b>Syllabus Summary</b>	
<b>Year 12 – AS Level (Edexcel 8540)</b>	<b>Year 13 – A2 Level (Edexcel 9540)</b>
<p><b>Unit 1 ~ Mechanics and Radioactivity</b> Newton's laws of motion, kinematics, forces, statics, mechanical energy, radioactive decay and the nuclear atom.</p> <p><i>1h 15 min test worth 30% of AS marks</i></p>	<p><b>Unit 4 ~ Waves and Our Universe</b> Circular motion and oscillations, simple harmonic motion, waves, quantum phenomena and the expanding Universe.</p> <p><i>1h 20 min test worth 15% of A2 marks</i></p>
<p><b>Unit 2 ~ Electricity and Thermal Physics</b> Current and potential difference, electrical circuits, kinetic model of matter, energy conservation, introduction to thermodynamics..</p> <p><i>1h 15 min test worth 30% of AS marks</i></p>	<p><b>Unit 5 ~ Fields and Forces &amp; Practical Test</b> Gravitational, electrical and magnetic fields, capacitance and electromagnetic induction.</p> <p><i>1 hour test worth 7.5% of A2 marks 1h 30 min practical test worth 7.5% of A2 marks</i></p>
<p><b>Unit 3 ~ Topics &amp; Practical Test</b> Students study <i>one</i> of the following</p> <ul style="list-style-type: none"> <li>• Astrophysics</li> <li>• Solid materials</li> <li>• Nuclear and particle physics</li> <li>• Medical physics</li> </ul> <p><i>30 minute topics test worth 20% of AS marks 1h 30 min practical test worth 20% of AS marks</i></p>	<p><b>Unit 6 ~ Synoptic Test</b> This is a synoptic unit, testing knowledge and understanding from all five previous AS / A2 units in a variety of contexts.</p> <p><i>2 hour synoptic test worth 20% of A2 marks Remaining 50% of A2 marks are from AS.</i></p>
<p><b>Entry Requirements:</b> Grade B or higher at IGCSE or equivalent in Physics or Combined Science; Grade B or higher at IGCSE or equivalent in Mathematics.</p>	