



### Curriculum Plans – Year 13 - Physics

Please find below a detailed outline of the curriculum covered in *Physics* through Year 13 in *Sixth Form*.

BLOCK	1	2	3	4	5	6	7
Dates	28th August - 27th September (5 weeks)	2nd October - 27th October (4 weeks)	6th November - 15th December (6 weeks)	3rd January - 2nd February (5 weeks)	12th February - 22nd March (6 weeks)	2nd April - 26th April (4 weeks)	6th May - 21st June (7 weeks)
Topics	<p><b>Circular motion</b> (Unit 16)</p> <ul style="list-style-type: none"> <li>• Cinematics of uniform circular motion</li> <li>• Centripetal acceleration</li> </ul> <p><b>Gravitational fields</b> (Unit 17)</p> <ul style="list-style-type: none"> <li>• Gravitational field</li> <li>• Gravitational potential</li> </ul> <p><b>Oscillations</b> (Unit 18)</p> <ul style="list-style-type: none"> <li>• Free and forced oscillations</li> <li>• SHM model</li> <li>• Graphical representations</li> <li>• Eqns. of periodic motion</li> <li>• Energy in SHM</li> <li>• Damping</li> <li>• Resonance</li> </ul> <p><b>Practical skills</b></p>	<p><b>Astronomy and cosmology</b> (Unit 31)</p> <ul style="list-style-type: none"> <li>• Standard candles</li> <li>• Luminosity</li> <li>• Stellar radii</li> <li>• The expanding Universe</li> </ul> <p><b>Thermal physics</b> (Unit 19)</p> <ul style="list-style-type: none"> <li>• State of a system</li> <li>• Energy changes</li> <li>• Temperature</li> <li>• Measuring internal energy and temperature</li> </ul> <p><b>Ideal gasses</b> (Unit 20)</p> <ul style="list-style-type: none"> <li>• Gas laws</li> <li>• Statistical model of a gas</li> <li>• Ideal gas equation</li> <li>• Molecular kinetic energy</li> </ul> <p><b>Practical skills</b></p>	<p><b>Uniform electric fields</b> (Unit 21)</p> <ul style="list-style-type: none"> <li>• The concept of an electric field</li> <li>• Electric field</li> <li>• Electric field strength</li> <li>• Force on charge</li> </ul> <p><b>Coulomb's law</b> (Unit 22)</p> <ul style="list-style-type: none"> <li>• Electric force and field of a point charge</li> <li>• Coulomb's law</li> <li>• Electric potential</li> <li>• Comparing fields</li> </ul> <p><b>Capacitance</b> (Unit 23)</p> <ul style="list-style-type: none"> <li>• Capacitor and capacitance</li> <li>• Capacitors in series and parallel</li> </ul> <p><b>Practical skills</b></p>	<p><b>Magnetic fields and Electromagnetism</b> (Unit 24)</p> <ul style="list-style-type: none"> <li>• Magnetic force and fields</li> <li>• Magnetic flux density</li> <li>• Oersted's experiment</li> <li>• Ampere's experiment</li> </ul> <p><b>Motion of charged particles</b> (Unit 25)</p> <ul style="list-style-type: none"> <li>• Force on a moving charged particle</li> <li>• Hall effect</li> <li>• Discovering electron</li> </ul> <p><b>Electromagnetic induction</b> (Unit 26)</p> <ul style="list-style-type: none"> <li>• Faraday's law</li> <li>• Lenz's rule</li> </ul> <p><b>Alternating currents</b> (Unit 27)</p> <ul style="list-style-type: none"> <li>• Principle of AC generator</li> <li>• Transformer</li> <li>• AC/DC circuits, advantages and disadvantages</li> </ul> <p><b>Past papers</b></p>	<p><b>Quantum physics</b> (Unit 28)</p> <ul style="list-style-type: none"> <li>• Particle nature of light</li> <li>• Photoelectric effect</li> <li>• Line spectra</li> <li>• Wave-particle duality</li> </ul> <p><b>Nuclear physics</b> (Unit 29)</p> <ul style="list-style-type: none"> <li>• Einstein's mass energy equivalence</li> <li>• Energy released in nuclear transformations</li> <li>• Binding energy and stability of nuclei</li> <li>• Decay curve</li> </ul> <p><b>Medical imaging</b> (Unit 30)</p> <ul style="list-style-type: none"> <li>• Ultrasound in medicine</li> <li>• X-rays in medicine</li> <li>• MRI scan</li> </ul> <p><b>Revision</b> Units 24-27 Units 28, 29, 32</p> <p><b>Past papers and exam technique</b></p> <p><b>Practical skills</b></p> <p><b>Intervention</b></p>	<p><b>Revision</b> Units 16-18 Units 19-21 Units 22,23 and 31</p> <p><b>Past papers and exam technique</b></p> <p><b>Practical skills</b></p> <p><b>Intervention</b></p>	<p><b>Revision lessons</b></p> <p><b>A2 Exam</b></p>



				and exam technique			
				Practical skills			
				MOCK exam			
Assessments	Unit 16-18 Assessment	Unit 16-20 Assessment	Unit 16-23 Assessment	Unit 16-27 Assessment	Unit 16-30 Assessment	Unit 16-30 Assessment	<b>External Cambridge A2 Exam</b>
Academic Theme	Planning for Tomorrow	The World around us	Better Together	The Working World	Opportunities for Everyone	Keep it Green, Keep it Clean	Healthy Body, Healthy Mind