

What are the aims and intentions of this curriculum?

The GCE in A Level Physics is developed to inspire and challenge students of all abilities and aspirations.

As learners progress through the course they will build on their knowledge of the laws of Physics, applying their understanding to solve problems on topics ranging from sub-atomic particles to the entire universe. There are 12 Practical Endorsement activities linked to the areas of content. The practical endorsement comprises Planning, Implementation, Analysis and Evaluation of experiments. The purpose is to endorse the teaching of content/knowledge with skill development. The course will develop their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with Physics.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	Module 5: Newtonian world and Astrophysics <ul style="list-style-type: none"> Thermal Physics Circular motion 	Students will learn: <ul style="list-style-type: none"> To describe how there is an absolute scale of temperature that does not depend on the property of any particular substance – i.e. the thermodynamic scale and the concept of absolute zero That a force perpendicular to the velocity of an object will make the object describe a circular path. 	Students are able to: <ul style="list-style-type: none"> Demonstrate thermal equilibrium. Use the equation; angular velocity = $2\pi/T$ 	<ul style="list-style-type: none"> Practical works SMART Test
Autumn 2	Module 5: Newtonian world and Astrophysics <ul style="list-style-type: none"> Oscillations Gravitational fields Astrophysics and cosmology 	Students will learn: <ul style="list-style-type: none"> To demonstrate the use of a visual acceleration trolley to show the acceleration of an oscillating system – note the direction and magnitude. That a force perpendicular to the velocity of an object will make the object describe a circular path. To explain that close to the Earth's surface, the gravitational field strength is uniform and approximately equal to the acceleration of free fall. 	Students are able to: <ul style="list-style-type: none"> Use techniques and procedures to determine the period and frequency of simple harmonic oscillations Use the formula $g = F/m$ to solve problems involving gravitational field strength due to mass 	<ul style="list-style-type: none"> Practical works SMART Test

Spring 1	<p>Module 5: Newtonian world and Astrophysics</p> <ul style="list-style-type: none"> • Astrophysics and cosmology <p>Module 6 Particles and medical physics</p> <ul style="list-style-type: none"> • Capacitors • Electric fields • Electromagnetism 	<p>Students will learn:</p> <ul style="list-style-type: none"> - About the term planets, planetary satellites, comets, solar systems, galaxies, and the Universe. - About the energy levels in atoms. 	<p>Students are able to:</p> <ul style="list-style-type: none"> - Describe the objects in the Universe - Demonstrate the emission spectral lines from hot gases in terms of transition of electrons between discrete energy levels and emission of photons 	<ul style="list-style-type: none"> - Practical works - SMART Test
Spring 2	<p>Module 6: Particles and medical physics</p> <ul style="list-style-type: none"> • Nuclear and particle physics • Medical imaging 	<p>Students will learn:</p> <ul style="list-style-type: none"> - To state and use the equation for the total capacitance of two or more capacitors in series and parallel. - To describe the uses of capacitors for the storage of energy in applications such as flash photography, lasers used in nuclear fusion and as backup power supplies for computers. 	<p>Students are able to:</p> <ul style="list-style-type: none"> - Demonstrate the simple quark model of hadrons in terms of up, down, and strange quarks and their anti-quarks. - Explain the basic structure of an X-ray tube; components – heater (cathode), anode, target metal and high voltage supply 	<ul style="list-style-type: none"> - Practical works - Research the applications of capacitors – i.e. smoothing the timing, tuning, etc. - SMART Test
Summer 1	<ul style="list-style-type: none"> • Unifying concepts • Revision 			