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	**August - September** (5 weeks)	**October** (4 weeks)	**November - December** (6 weeks)	**January - February** (5 weeks)	**February - March** (6 weeks)	**April** (4 weeks)	**May - June** (7 weeks)
Topics	**Circular motion** (Unit 16) ● Cinematics of uniform circular motion ● Centripetal acceleration **Gravitational fields** (Unit 17) ● Gravitational field ● Gravitational potential **Oscillations** (Unit 18) ● Free and forced oscillations ● SHM model ● Graphical representations ● Eqns. of periodic motion ● Energy in SHM ● Damping ● Resonance **Practical skills**	**Astronomy and cosmology** (Unit 31) ● Standard candles ● Luminosity ● Stellar radii ● The expanding Universe **Thermal physics** (Unit 19) ● State of a system ● Energy changes ● Temperature ● Measuring internal energy and temperature **Ideal gasses** (Unit 20) ● Gas laws ● Statistical model of a gas ● Ideal gas equation ● Molecular kinetic energy **Practical skills**	**Uniform electric fields** (Unit 21) ● The concept of an electric field ● Electric field ● Electric field strength ● Force on charge **Coulomb's law** (Unit 22) ● Electric force and field of a point charge ● Coulomb's law ● Electric potential ● Comparing fields **Capacitance** (Unit 23) ● Capacitor and capacitance ● Capacitors in series and parallel **Practical skills**	**Magnetic fields and Electromagnetism** (Unit 24) ● Magnetic force and fields ● Magnetic flux density ● Oersted's experiment ● Ampere's experiment **Motion of charged particles** (Unit 25) ● Force on a moving charged particle ● Hall effect ● Discovering electron **Electromagnetic induction** (Unit 26) ● Faraday's law ● Lenz's rule **Alternating currents** (Unit 27) ● Principle of AC generator ● Transformer ● AC/DC circuits, advantages and disadvantages **Past papers and exam**	**Quantum physics** (Unit 28) ● Particle nature of light ● Photoelectric effect ● Line spectra ● Wave-particle duality **Nuclear physics** (Unit 29) ● Einstein's mass energy equivalence ● Energy released in nuclear transformations ● Binding energy and stability of nuclei ● Decay curve **Medical imaging** (Unit 30) ● Ultrasound in medicine ● X-rays in medicine ● MRI scan **Revision** Units 24-27 Units 28, 29, 32 **Past papers and exam technique** **Practical skills** **Intervention**	**Revision** Units 16-18 Units 19-21 Units 22,23 and 31 **Past papers and exam technique** **Practical skills** **Intervention**	**Revision lessons** **A2 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	**External Cambridge A2 Exam**
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