Curriculum Map – Physics– Year 13

Immanuel College
Church of England Academy

	Term 1		Term 2		Term 3	
Key focus	3.7 - Gravitational and Electric Fields 3.6.1 - Circular and Simple Harmonic Motion	3.7.4 – Capacitors 3.6.2 – Thermal Physics	3.7.5 – Magnetic Fields 3.8 – Nuclear Physics	3.12 – Turning Points in Physics Year 1 and 2 Revision	Revision	
Purpose of the scheme	The purpose of this course is to give you the opportunity to explore the phenomena of the universe, with theories that explain what is observed, and practical experiments to test those ideas.					
Pre read (suggested)	Satellite Motion, SpaceX	Use of capacitors in power supplies, timing circuits.	Study of Nuclear Energy, link Chernobyl	TURNING POINTS IN PHYSICS: A SERIES OF LECTURES GIVEN AT OXFORD UNIVERSITY		
Key knowledge and skills	a) Gravitational and Electric Fields b) Circular motion and oscillating systems c) Problem Solving using graphs, force diagrams d) Practical Skills (RP7)	a) Use of capacitors as temporary stores of charge. b) Thermal energy transfers, ideal gases, kinetic theory model c) Calculations using logarithms Practical Skills (RP8 and RP9)	a) Magnetic Fields and Charges, Electromagnetic Induction b) Radioactive decay, nuclear energy, and fission c) Calculations using logarithms Practical Skills (RP10, 11 and 12)	a) Discovery of the Electron b) Wave-Particle Duality c) Special Relativity Revision of topics from Y1 and Y2	Revision	
Key words/ vocabulary	• Potential • Energy • Field Strength • Equipotential • Radians • Angular Speed • Centripetal Acceleration • Oscillations • Resonance	• Capacitance • Dielectric • Relative Permittivity • Charging/Discharging • Time Constant • Internal Energy • Isothermal • Isobaric • Molecular Kinetic Theory	• Mag. Flux Density • Magnetic Flux • Mag. Flux Linkage • Induced emf • Transformers • Inverse-square law • Decay probability • Binding Energy • Mass Defect	• Thermionic Emission • Charge quantisation • Corpuscular Theory • Wavefronts • Permeability • Permittivity • Invariance • Inertial Frame • Postulate	Revision	
Exam board	AQA A-Level Physics					
End point	A-Level Physics Exam Paper 1, 2 and 3	A-Level Physics Exam Paper 1, 2 and 3	A-Level Physics Exam Paper 1, 2 and 3	A-Level Physics Exam Paper 1, 2 and 3	A-Level Physics Exam Paper 1, 2 and 3	
Assessment method	• PRP Assessment Intervention	• PRP Assessment • Mock assessment Intervention	• PRP Assessment • Classroom Mocks Intervention	• PRP Assessment • Mock assessment Intervention	External Exams	
Wider reading / links / research	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions		

Curriculum Map – Physics– Year 13

Immanuel College
Church of England Academy

Careers links	Civil Engineering	Timing circuits, Electrical Engineering	Nuclear physicist Electrical Engineering Analysis/Modelling	Quantum physicist		

“Perseverance produces **character,** and character, **hope**” (Romans 5:4)