Curriculum Map – Physics – Year 12

Immanuel College
Church of England Academy

	Term 1		Term 2		Term 3	
Key focus	3.2.1 – Particles 3.4.1 – Force, Energy and Momentum	3.2.2 – Electromagnetic Radiation and Quantum Phenomena 3.4.2 – Bulk Properties of Solids	3.3.1 – Progressive and stationary Waves 3.5 – Electricity	3.3.2 – Refraction, diffraction and interference Year 1 Revision	Assessment Preparation	Assessments
Purpose of the scheme						
Pre read (suggested)	Atom (Paperback) by Jim Al-Khalili (Foreword), Piers Bizony (Author)	Vibrations and Waves (Manchester Physics Series), George C. King	Nuclear Power: A Very Short Introduction by Maxwell Irvine	Newton to Einstein: The Trail of Light: An Excursion to the Wave-Particle Duality and the Special Theory of Relativity		
Key knowledge and skills	a) Constituents of the atom b) Stable and Unstable Nuclei c) Particles, antiparticles and photons d) Moments e) Motion along a straight line f) Find “g” practical	a) The photoelectric effect b) Collisions of electrons and atoms c) Energy level and photon emission d) Density e) Hooke’s Law f) Stress/Strain g) Young Modulus	a) Progressive waves b) Longitudinal and transverse waves c) Superposition d) Stationary waves e) Resistance f) Current g) Voltage h) Ohm’s law i) Circuits j) Potential Divider k) Electromotive force	a) Interference pattern b) Young’s double-slit experiment c) Fringe Spacing d) Diffraction pattern e) Refractive index Revision of year 1	a) Revision Skills b) Walkthrough of AQA assessment scripts c) Practical Skills (Y1)	
Key words/ vocabulary	• Subatomic Particles • Strong nuclear force • Unstable nuclei • MeV • Planck constant • Force • Displacement and distance • SUVATS • Speed, velocity Mass	• Threshold frequency • Ionisation and Excitation • Line spectra • de Broglie Wavelength • Tensile • Deformation • Plastic and elastic	• Oscillation • Amplitude • Frequency • Wavelength • Phase Difference • Flow of charge • Potential difference • Ammeter/Voltmeter Series/Parallel	• Path Difference • Coherence • Fringe Spacing • Diffraction Gratings • Snell’s Law • Refractive Index • Total Internal Reflection • Material and Modal Dispersion		
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	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	• PRP Assessment • Mock assessment • Intervention	Internal Exams

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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	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions	Maths – significant figures, means, inequalities, rearranging equations, mechanic functions
Careers links	Civil Engineering Particle Physicist	Civil Engineering Geotechnical engineering	Electrical Engineering	Communication Engineer		

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