

OXFORD

INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL A-LEVEL PHYSICS

Teaching Plan

Year 1 International AS Level

Ref	Topic	Practical	Number of weeks (based on each teacher taking half of the timetabled lessons)
3.1	Measurements and their errors		
3.1.1	Use of SI units and their prefixes		0.5
3.1.2	Limitation of Physical Measurements		1.0
3.1.3	Estimation of Physical Quantities		0.5
3.2	Mechanics and materials		
3.2.1	Scalars and Vectors		0.5
3.2.2	Moments		0.5
3.2.3	Motion along a straight line	Required practical 1 Determination of g by a freefall. Procedures should include determination of g from graph (eg/from graph of s against t²)	1.5
3.2.4	Projectile motion		1.0
3.2.5	Newton's Laws of Motion		1.0
3.2.6	Momentum		1.0
3.2.7	Work, Energy and Power		1.0
3.2.8	Conservation of Energy		0.5
3.2.9	Bulk properties of solids		1.0
3.2.10	The Young Modulus	Required practical 2 Investigation of load-extension graph for a wire and determination of the Young modulus for the material of the wire.	0.5

3.3	Particles, radiation and radioactivity		
3.3.1	Constituents of the atom		0.5
3.3.2	Elementary Particles		0.5
3.3.3	Radioactivity		1.0
3.4	Electricity		
3.4.1	Basics of electricity		0.5
3.4.2	Current voltage characteristics		0.5
3.4.3	Resistivity		1.5
3.4.4	Circuits		1.5
3.4.5	Potential divider		1.0
3.4.6	Electromotive force and internal resistance	Required practical 3: Investigation of the emf and internal resistance of electric cells and batteries by measuring the variation of the terminal pd of a cell or battery with current	1.0
3.5	Oscillations and waves		
3.5.1	Oscillating systems		1.0
3.5.2	Forced vibrations and resonance		0.5
3.5.3	Progressive waves		0.5
3.5.4	Longitudinal and transverse wave		1.0
3.5.5	Principle of superposition of waves and formation of stationary waves		1.5
3.5.6	Interference	Required Practical 4: Investigation of interference effects to include the Young's slit experiment and interference by a diffraction grating.	2.0
3.5.7	Diffraction		1.0
3.5.8	Refraction at a plane surface		1.0

3.5.9	Collisions of electrons with atoms		0.5
3.5.10	Photoelectric effect		1.0
3.5.11	Wave particle duality		0.5
Total International AS Level Teaching Time			30

Year 2 International A2

Ref	Topic	Practical	Number of weeks (based on each teacher taking half of the timetabled lessons)
3.6	Circular and periodic motion		
3.6.3	Circular Motion		1.0
3.6.4	Simple Harmonic Motion (SHM) – Part 1		1.0
3.6.4	Simple harmonic motion	Required practical 5: Investigation into simple harmonic motion using a mass–spring system and a simple pendulum.	1.5
3.7	Gravitational fields and satellites		
3.7.2	Newton’s gravitational law		0.5
3.7.3	Gravitational field strength		0.5
3.7.4	Gravitational potential		0.5
3.7.5	Orbits of planets and satellites		0.5
3.8	Electric fields and Capacitance		
3.8.1	Coulomb’s law and		0.5
3.8.2	Electric field strength		
3.8.3	Electric Potential		0.5
3.8.4	Capacitors		1.5
3.9	Electric fields and Capacitance		
3.9.1	Capacitor charge and discharge	Required practical 6: Investigation of the charge and discharge of capacitors. Analysis techniques should include log-linear plotting leading to a determination of the time constant, RC	0.5
3.9.2	Exponential changes in radioactivity		1.0
3.10	Magnetic fields		
3.10.1	Magnetic Flux Density		1.0
3.10.2	Moving charges in a magnetic field		1.0

3.10.3	Magnetic flux and flux linkage		1.0
3.10.4	Electromagnetic Induction		1.0
3.10.5	Alternating Currents		0.5
3.10.6	Operation of a transformer	Require practical 7 : Investigation of the efficiency of a transformer	0.5
3.11	Thermal Physics		
3.11.1	Energy transfer by heating and doing work	Required practical 8: Determination of specific heat capacity by an electrical method.	1.5
3.11.2	Energy transfer by heating and doing work		1.0
3.11.3	Ideal Gases	Required practical 9: Investigation of Boyle's law (constant temperature) and Charles's law (constant pressure) for a gas.	1.5
3.11.4	Kinetic Theory of Gases		1.0
3.12	Nuclear Energy		
3.12.1	Radius of the nucleus		0.5
3.12.2	Mass and Energy		0.5
3.8.1.7	Induced Fission		0.5
3.12.4	Safety aspects nuclear reactors		0.5
3.12.4	Nuclear fusion		0.5
3.13	Energy Sources		
3.13.1	Rotational Motion		2.0
3.13.2	Wind energy, Solar Energy, Hydroelectric power and pumped storage	Required Practical 10: Investigation of the inverse square law for light using an LDR and a point source.	1.0
Total International A2 Level Teaching Time			30