

Year 12 Physics – Curriculum overview

Week number	Teacher 1	Teacher 2	Assessments	Practicals
1	Sign-up and course introduction	Sign-up		
2	Physical quantities and units (Basic physics)	Intro		
3	Vector calculations (Basic physics)	Current and Charge		
4	Kinematics intro and graphs of motion (Kinematics)	Current and Charge		
5	Linear motion (Kinematics)	EMF, PD and Resistance		
6	Freefall and terminal velocity (Kinematics)	Ohm's Law	Cumulative assessment – basic physics and kinematics.	Practical (ACW) – Measurement of g by freefall.
7	Projectile motion (Kinematics)	Power and Resistivity		
OCTOBER HT				
8	Newton's laws (Dynamics)			Practical (ACW) – Investigation of Newton's 2 nd law.
9	Momentum (Dynamics)	Superconductivity	Cumulative assessment – basic physics, kinematics, Newton's laws and momentum.	
10	Density (Basic physics)			Practical (ACW) – Measurement of density of solids.
11	Moments (Basic physics)			Practical (ACW) – Determination of unknown masses by using the principle of moments.
12	Work and Energy (Energy concepts)	Kirchoff's Laws/Circuits		
13	Power (Energy concepts)	Potential Dividers and Internal resistance	Cumulative assessment – basic physics, kinematics, dynamics and energy concepts.	
14	Efficiency (Energy concepts)			
CHRISTMAS				
15	Deformation of materials (Solids under stress)	The Atom		
16	Young modulus (Solids under stress)	Particles	Cumulative assessment - basic physics, kinematics, dynamics, energy concepts and deformation of materials.	Practical (ACW) – Determination of Young modulus of a metal in the form of a wire.
17	Stress-strain characteristics of brittle and ductile materials (Solids under stress)	The Four Forces		
18	Stress-strain characteristics of polymeric materials (Solids under stress)	Stimulated Emission		Practical (ACW) – Investigation of the force-extension relationship for rubber.
19	The nature of waves (Nature of waves)	Lasers		
20	Wave speed and phase difference (Nature of waves)		Cumulative assessment - basic physics, kinematics, dynamics, energy concepts, solids under stress and nature of waves.	
FEBRUARY HT				

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Week number	Teacher 1	Teacher 2	Assessments	Practicals
21	Polarisation (Nature of waves)	Refraction		Practical (ACW) – Measurement of the intensity variations for polarisation.
22	Diffraction and interference (Wave properties)	Refraction and optical fibres		
23	Interference and Young's double slits (Wave properties)			Practical (ACW) - Determination of wavelength using Young's double slits.
24	Diffraction Gratings (Wave properties)			
25	Diffraction Gratings (Wave properties)		Cumulative assessment - basic physics, kinematics, dynamics, energy concepts, solids under stress, nature of waves and wave properties.	Practical (ACW) – Determination of wavelength using a diffraction grating.
26	Stationary Waves (Wave properties)			Practical (ACW) – Determination of the speed of sound using stationary waves.
EASTER				
27	Atomic energy levels, absorption and emission spectra (Photons)			
28	EM spectrum and photoelectric effect (Photons)			
29	<u>Mock Exam</u>	<u>Mock Exam</u>		
30	<u>Mock Exam</u>	<u>Mock Exam</u>		
31	Photoelectric effect (Photons)			
32	Wave-particle duality (Photons)			
MAY HT				
33	Wave-particle duality (Photons)			
34	Absorption and emission spectra and black body radiation (Using radiation to investigate stars)			
35	Luminosity, intensity and distance (Using radiation to investigate stars)			
36	Multi-wavelength astronomy (Using radiation to investigate stars)			
37	Consolidation		Cumulative assessment - basic physics, kinematics, dynamics, energy concepts, solids under stress, nature of waves, wave properties, photons and URTIS.	
38	Consolidation			
39	Consolidation			