

Year 13

Timing	Unit Title	Key Question	Knowledge		Assessing understanding
			Teacher 1	Teacher 2	
Autumn	Further Mechanics and Astrophysics	What are the definitions?	Simple Harmonic Motion	RP8: Boyle's and Charles' Laws	How understanding is assessed Students will be assessed on their ability to: - Recall the knowledge covered - Explain the Physical processes covered. - Interpret graphical and experimental data - Plan and describe valid experiments - Evaluate experimental procedures and results Skills - Description - Explanation - Evaluation - Comparison - Planning and carrying out investigations - Manipulating Mathematical Formulae Assessment point information Based on: - Home works during the term - Test on Astrophysics - Test on Further Mechanics
	Kinetic Theory	What is the key theory?	- Pendulum - Mass spring system	- Derivation of the ideal gas Equation - Temperature Kinetic Energy relationship	
	Fields	Can I apply the theory in order to solve problems?	Resonance and Stationary Waves	- Optical Telescopes - Single dish radio telescopes	
	Electric Fields		RP7 Pendulum and Mass Spring System	Large diameter telescopes and resolution	
	Magnetic Fields and Radioactivity		- Gravitational Fields - Newton's Law of Gravity - Gravitational Field strength - Gravitational Potential - Planetary Fields + Satellites - Coulomb's Law - Electric Field Patterns - Electric Field Strength:	- Comparison of Eye and CCD - Luminosity, Magnitude and apparent Magnitude - Classification by Magnitude - Black Body Radiation, Wien's Law, Stefan's Law - Classifications by Temperature. - Stellar Spectral Classes - HR Diagrams	

			• Electric Potential • Point sources vs. Plates • Capacitance • Dielectric Equation • Energy Stored in a capacitor • Charging and Discharging • RP9 (Capacitor Charge/ Discharge) • Magnetic Fields	• Star Lifecycles • Neutron stars and Blackholes • Doppler effect and Red Shift • Hubble's Law/ CMBR/Dark Matter • Quasars • Exoplanets	
Spring	EM Induction Nuclear Physics	What are the definitions? What is the key theory? Can I apply the theory in order to solve problems?	• RP:10 Force exerted by current carrying conductor • BIL and BeV • Flux + Flux Linkage • Hall Probe • EM Induction • AC Generator and AC • Oscilloscopes • Transformer • RP:11 (Hall probe/ Search Coil)	• Rutherford Scattering • Radioactivity Introduction • Alpha, Beta and Gamma radiation • Half value thickness exp. • Inverse Square Law • Radioactive Decay • Half Life • Half life practical • Applications of Radioactivity	How understanding is assessed Students will be assessed on their ability to: • Recall the knowledge covered • Explain the Physical processes covered. • Interpret graphical and experimental data • Plan and describe valid experiments • Evaluate experimental procedures and results Skills • Description • Explanation • Evaluation • Comparison • Planning and carrying out investigations • Manipulating Mathematical Formulae

				• R P:12 Inverse Square Law of Gamma rays • Segre Plot • Decay modes and Decay Series • Nuclear Radius • Electron Diffraction • Nuclear Density • Binding Energy per nucleon • Fission + Calculations	Assessment point information Based on: • Home works during the term • Mocks on all topics covered so far • Test on Thermal Physics and Radioactivity tbc • Test on Capacitance and electric fields tbc
Summer	Nuclear Physics	What are the definitions? What is the key theory? Can I apply the theory in order to solve problems?	Revision	• Fission Power Station • Fusion • Safety in Power Stations • Nuclear Waste Disposal	How understanding is assessed Students will be assessed on their ability to: • Recall the knowledge covered • Explain the Physical processes covered. • Interpret graphical and experimental data • Plan and describe valid experiments • Evaluate experimental procedures and results Skills • Description • Explanation • Evaluation • Comparison • Planning and carrying out investigations • Manipulating Mathematical Formulae

					Assessment point information Based on: • Possible mini mock • A Level Exams
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