

	Term 1+2	Term 3+4	Term 5+6
YEAR 12 Physics	<p>Particles and Radiation</p> <ul style="list-style-type: none"> Stable and unstable nuclei Particles, antiparticles and photons Quarks and antiquarks The photoelectric effect Energy levels and photon emissions Wave-particle duality <p>Mechanics and Materials</p> <ul style="list-style-type: none"> Scalars and vectors Moments Projectile motion Newton’s Laws of Motion Momentum Energy conservation The Young Modulus 	<p>Waves</p> <ul style="list-style-type: none"> Progressive and stationary waves Longitudinal and transverse waves Principle of superposition of waves Refraction, diffraction and interference <p>Electricity</p> <ul style="list-style-type: none"> Current electricity Current –voltage characteristics Resistivity DC circuits Potential divider EMF and internal resistance 	<p>Further Mechanics</p> <ul style="list-style-type: none"> Circular motion Simple harmonic motion Simple harmonic systems Forced vibrations and resonance <p>Thermal Physics</p> <ul style="list-style-type: none"> Thermal energy transfer Ideal gases Molecular kinetic theory
YEAR 13 Physics	<p>Fields</p> <ul style="list-style-type: none"> Newton’s law of gravitation Gravitational field strength and potential Orbits of planets and satellites Coulomb’s law Electric field strength and potential <p>Nuclear Physics</p> <ul style="list-style-type: none"> Rutherford scattering Alpha, beta and gamma radiation Radioactive decay Nuclear instability Nuclear radius Mass and energy Induced fission 	<p>Capacitance</p> <ul style="list-style-type: none"> Parallel plate capacitor Energy stored in a capacitor Capacitor charging and discharge <p>Magnetic fields</p> <ul style="list-style-type: none"> Magnetic flux density Moving charges in a magnetic field Magnetic flux and flux linkage Electromagnetic induction Alternating currents Transformer operation 	<p>Astrophysics</p> <ul style="list-style-type: none"> Refracting telescopes Single dish radio telescopes Classification of stars Absolute magnitude Black body radiation Stellar spectral classes Supernovae, neutron stars and black holes Doppler effect Hubble’s Law Quasars Detection of exoplanets

