Key Stage 5 (13)	
Course title: Physics A-Level	
Exam board: OCR B (from 2023-2024)	
Specification code: H556	
Autumn 1 (September – October)	**Teacher 1: Circular motion** This topic builds on work done in key stage **4 (**year 11) Forces and Space topics and is ideally placed after students have studied Newton's Laws of Gravitation so that they can apply that equation to the simple concept of planetary motion. The mathematical and conceptual demands grow, as the angle unit, radian is introduced and students are expected to work from first principles to evaluate the forces contributing to the centripetal force.
	Teacher 2: Astrophysics Perfectly placed after students have studied gravitational fields at the start of key stage 5 **(**year 13) and Waves & photons. Students will study the forces involved in star life cycles, building on GCSE knowledge (or year 9 for combined science GCSE students). They will then apply their knowledge of EM waves and photons to learn about the spectral analysis of radiation emitted from stars. In Cosmology they will further their understanding of red-shift (or be introduced to it for combined science students) and consider the evolution of the universe.
Autumn 2 (October – December)	**Teacher 1: Oscillations** Students will compare the motion of a mass in a circle from the previous topic with the linear movement of an object oscillating in SHM. The mathematical demands are high, and students will look at sinusoidal relationships and use trigonometry and differentiation to derive equations.
	Teacher 2: Electric fields Students will look for similarities and differences between electric fields and gravitational fields and learn about uniform and radial electric fields. This is put before capacitors to provide a good foundation of the principles.
Spring 1 (January – February)	**Teacher 1: Nuclear and particle physics** This topic starts by recapping atomic structure, covered in key stage 4 **(**year 10) physics and chemistry, adding in new knowledge of the SNF and calculations of nuclear radius and density. Students then delve deeper into the particle model learning about antimatter, quarks and leptons, the conservation of charge in particle decay and the role of the weak nuclear force. Radioactivity builds on GCSE knowledge and is taught alongside capacitors to reinforce the exponential relationship. Students then look at mass-energy and are introduced to Einstein's famous equation.

	Teacher 2: Capacitors Capacitors is taught after electric fields as an understanding of the electric field between the plates is important. Students will be studying the exponential relationship of capacitor charging and discharging alongside the exponential decay of radioactive sources.
Spring 2 (February – March)	**Teacher 1: Medical imaging** In this topic, students will apply their knowledge of particles, radioactivity, waves and their understanding of mathematical relationships such as exponential decay to x-rays, the gamma camera and ultrasound.
	Teacher 2: Electromagnetism This must be taught after forces and electric fields. Conceptually this is a challenging topic, so completing this last, makes perfect sense. Students have studied the basics at GCSE (apart from in combined science) and this builds on that taking their understanding to a much deeper level.
Summer 1 (April – June)	**Teacher 1: Consolidation** This time is spent bringing together all knowledge to tackle synoptic style exam questions. Time will also be spent studying the practical skills and developing exam technique.
	Teacher 2: Consolidation This time is spent bringing together all knowledge to tackle synoptic style exam questions. Time will also be spent studying the practical skills and developing exam technique.
Summer 2 (June – July)	**Teacher 1: EXAMS**
	Teacher 2: EXAMS