A-Level physics follows the 7408 AQA Specification, details of which can be found here: AQA | Science | AS and A-level | Physics In the below, references to required reading, question practice and homework are from the A-Level Physics for AQA: Year 1 & 2 Student Book with Online Edition . Homeworks alternate between question practice from the book, past exam materials and the portal IsaacScience, details of which can be found here: Isaac Science. The course is delivered by three teachers concurrently.

Term	Key dates	EJA	Textbook	JWH	Textbook	LDA	Textbook
Autumn Term 1							
		Progressive waves	67-70	Constituents of the atom	19-22	Scalars and vectors	113-119
		Longitudinal and transverse waves	71-78	Stable and unstable nuclei	23-26	Moments	120-124
		Principle of superposition of waves and formation of stationary waves	79-81	Particles, antiparticles and photons	27-30	Motion along a straight line	125-138
			82-87	Particle interactions	42-46	**Required practical 3**	141-144
	Year 12 SiD	**Required practical 1**					
				Classification of particles	31-34	Projectile motion	145-150
		PC1		Quarks and antiquarks	38-41		
		October Half-Term					
Autumn Term 2		Interference	88-97	Applications of conservation laws	35-37	Newton's laws of motion	139-140
	Year 12 PC1					Momentum	151-157
	Particles	**Required practical 2**		Basics of electricity	191-193	Work, energy and power	158-161
	Y12 Parents Evening			Current–voltage characteristics	194-198	Conservation of energy	162-166
	Mechanics	Diffraction	98-101			Astronomical telescope consisting of two converging lenses	405-407
				Circuits	204-206	Reflecting telescopes	408-11
		Refraction at a plane surface	102-108		211-215	Single dish radio telescopes, I-R, U-V and X-ray telescopes	415-418
		Christmas Half-Term					
Spring Term 1	**Waves**	Bulk properties of solids	172-180	Resistivity	199-203	Advantages of large diameter telescopes	412-414
		The Young modulus	181-187			Classification by luminosity	423-426
		Required practical 4		**Required practical 5**		Absolute magnitude, M	419-422
	Materials					Classification by temperature, black-body radiation	427-430
		The photoelectric effect	51-55	Potential divider	216-218	Principles of the use of stellar spectral classes	431-434
						The Hertzsprung-Russell (HR) diagram	435-439
		February Half-Term					
Spring Term 2	**Electricity**	Collisions of electrons with atoms		**PC2**		Supernovae, neutron stars and black holes	440-444
		Energy levels and photon emission	56-59	Electromotive force and internal resistance	207-210	Doppler effect	445-448
						Hubble's law	449-452
	Year 12 PC2	Wave-particle duality	60-63	**Required practical 6**		Quasars	453-457
	Radiation					Detection of exoplanets	
		Easter Half-Term					
Summer Term 1	**Astrophysics**	**Revision**					
		May Half-Term					
Summer Term 2		**Revision**					
		Assessment					
	Year 12 Mock						
		Progress Week					
		Feedback					
		Work Experience					

3.2.1 Particles	3.2.2 Radiation	3.3.1 Waves
3.4.2 Materials	3.5.1 Electricity	3.9.1 Astrophysics

3.4.1 Mechanics
Assessment

Term	Key dates	EJA	Textbook	JWH	Textbook	LDA	Textbook
Autumn Term 1		Year 12 Review					
		Rutherford scattering	361-363	Circular motion	223-229	Fields	276-278
		α, β and γ radiation	371-378	Simple harmonic motion	230-236	Newton's law	
		Required practical 12		Simple harmonic systems	237-239	Gravitational field strength	279-281
	PC1 & UCAS			Simple harmonic systems	240-243	Gravitational potential	282-285
		Radioactive decay	379-387	Forced vibrations and resonance	244-247	Orbits of planets and satellites	286-290
		October Half-Term					
Autumn Term 2	Y13 Parents Evening	Nuclear instability	388-391	**Required practical 7**		Magnetic flux density	326-329
	Further Mechanics	Nuclear radius	364-370			**Required practical 10**	**330-332**
		Mass and energy	392-393	Capacitance	306-308		
		Induced fission	394-396	Parallel plate capacitor	311-312	Moving charges in a magnetic field	333-336
	Nuclear Physics	Safety aspects	397400	Energy stored by a capacitor	309-310	Magnetic flux and flux linkage	337-340
		Coulomb's law	291-295	Capacitor charge and discharge	313-321	**Required practical 11**	**341-343**
		Electric field strength				Electromagnetic induction	343-346
		Christmas Half-Term					
Spring Term 1	**Fields**	Electric potential	296-299	**Required practical 9**		Alternating currents	347-350
			300			The operation of a transformer	351-355
		Revision					
		Mocks					
		February Half-Term					
Spring Term 2	PC2 & Mock Results Deadline	**Mocks**					
		Feedback					
		Revision					
		Easter Half-Term					
Summer Term 1		**Departmental Mocks**					
		Feedback					
	Final Predictions	**Revision**					
		External Exams					
		May Half-Term					
Summer Term 2		**External Exams**					

3.6.1 Further Mechanics	3.7.2 Gravitational Fields	3.7.3 Electric Fields	**Assessment**
3.7.4 Capacitance	3.7.5 Magnetic Fields	3.8.1 Nuclear Physics	

Year 12:

3.2 Particles and radiation Students will develop their knowledge of particles and radiation. This section introduces students both to the fundamental properties of matter, and to electromagnetic radiation and quantum phenomena.

3.4.1 Force, energy and momentum Students will learn about force, energy and momentum Vectors and their treatment are introduced followed by development of the student's knowledge and understanding of forces, energy and momentum

3.5 Electricity Students will develop their knowledge of electricity, building on earlier learning of these phenomena from GCSE. It provides opportunities for the development of practical skills at an early stage in the course and lays the groundwork for later study of the many electrical applications that are important to society.

3.4.2 Materials Students will develop their knowledge of materials considered in terms of their bulk properties and tensile strength.

3.3 Waves Students will learn about waves and extend their GCSE studies of wave phenomena through a development of knowledge of the characteristics, properties, and applications of travelling waves and stationary waves.

3.9 Astrophysics Fundamental physical principles are applied to the study and interpretation of the Universe. Students gain deeper insight into the behaviour of objects at great distances from Earth and discover the ways in which information from these objects can be gathered. The underlying physical principles of the devices used are covered and some indication is given of the new information gained by the use of radio astronomy.

Year 13

3.6.1 Periodic motion Students will learn about Periodic motion. The earlier study of mechanics is further advanced through a consideration of circular motion and simple harmonic motion (the harmonic oscillator)

3.6.2 Thermal physics Students' knowledge of Thermal physics will be developed. The thermal properties of materials, the properties and nature of ideal gases, and the molecular kinetic theory to be studied in depth. This term will culminate in a summer research project followed by presentations

3.7 Fields and their consequences

3.7.1 Fields

3.7.2 Gravitational fields

3.7.3 Electric fields

3.7.4 Capacitance

3.7.5 Magnetic fields The concept of a field is one of the great unifying ideas in physics. The ideas of gravitation, electrostatics and magnetic field theory are developed within the topic to emphasise this unification. Many ideas from mechanics and electricity from earlier in the course support this and are further developed. Practical applications considered include: planetary and satellite orbits, capacitance and capacitors, their charge and discharge through resistors, and electromagnetic induction.

3.8 Nuclear physics This section builds on the work of Particles and radiation to link the properties of the nucleus to the production of nuclear power through the characteristics of the nucleus, the properties of unstable nuclei, and the link between energy and mass