

A-Level Physics – Introduction

Aims:

✓ What do we cover at A-level?

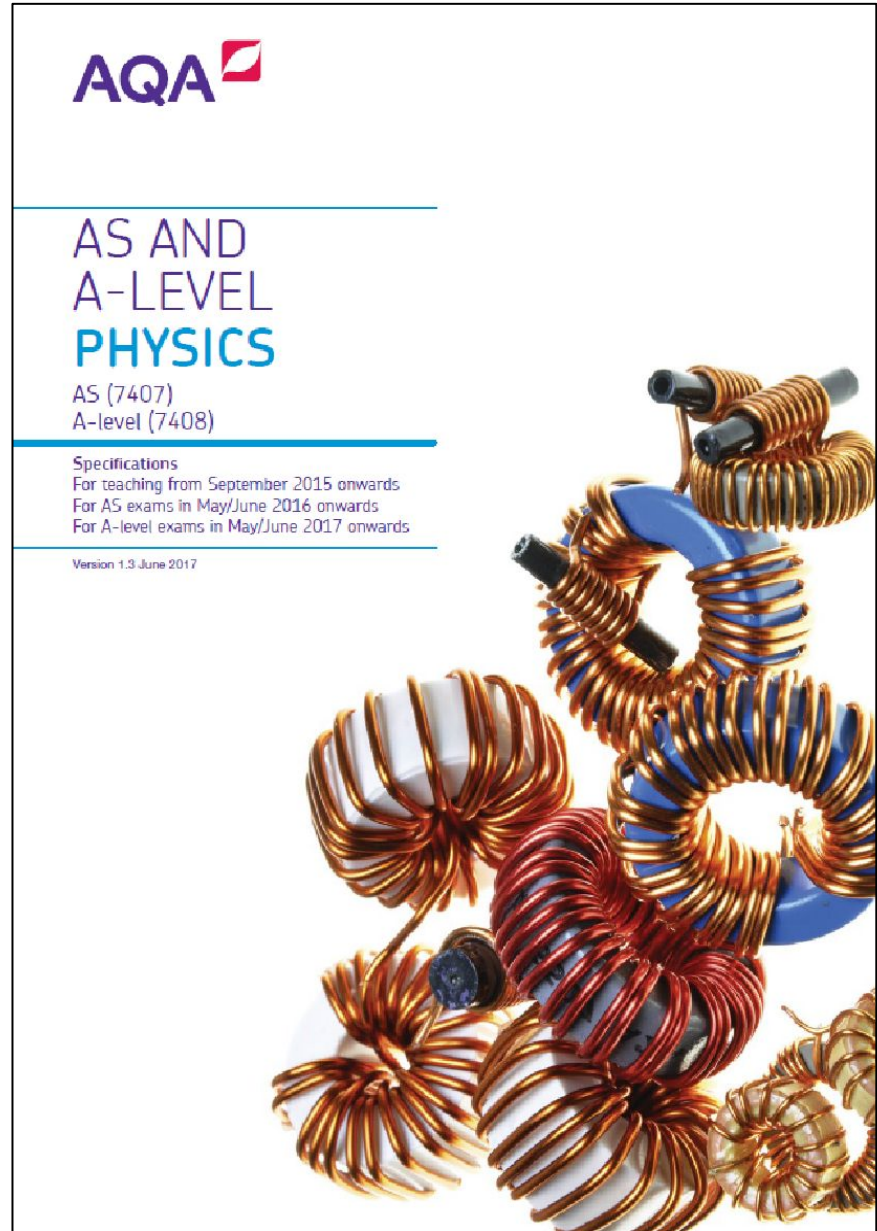
A-Level Physics

AQA A-level course.

AS 7407

A-level 7408

<https://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408>



Course Content

1. Measurements and their errors
2. Particles and radiation
3. Waves
4. Mechanics and materials
5. Electricity

A-level only:

6. Further mechanics and thermal physics
7. Fields and their consequences
8. Nuclear physics

Options (A-level only)

9. Astrophysics
10. Medical physics
11. Engineering physics
12. Turning points in physics
13. Electronics

+ Required Practical Skills

Required Practical Activities

The written papers will assess knowledge and understanding of these practical tasks.

1. Investigation into the variation of the frequency of stationary waves on a string with length, tension and mass per unit length of the string.
2. Investigation of interference effects to include the Young's slit experiment and interference by a diffraction grating.
3. Determination of g by a free-fall method
4. Determination of the Young modulus by a simple method.
5. Determination of resistivity of a wire using a micrometer, ammeter and voltmeter.
6. Investigation of the emf and internal resistance of electric cells and batteries by measuring the variation of the terminal pd of the cell with current in it.
7. Investigation into simple harmonic motion using a mass-spring system and a simple pendulum.
8. Investigation of Boyle's (constant temperature) law and Charles's (constant pressure) law for a gas.
9. Investigation of the charge and discharge of capacitors. Analysis techniques should include log-linear plotting leading to a determination of the time constant RC .
0. Investigate how the force on a wire varies with flux density, current and length of wire using a top pan balance.
1. Investigate, using a search coil and oscilloscope, the effect on magnetic flux linkage of varying the angle between a search coil and magnetic field direction.
2. Investigation of the inverse-square law for gamma radiation.

AS Assessments

Paper 1

What's assessed

Sections 1–5

Assessed

- written exam: 1 hour 30 minutes
- 70 marks
- 50% of AS

Questions

70 marks of short and long answer questions split by topic.

+

Paper 2

What's assessed

Sections 1–5

Assessed

- written exam: 1 hour 30 minutes
- 70 marks
- 50% of AS

Questions

Section A: 20 marks of short and long answer questions on practical skills and data analysis

Section B: 20 marks of short and long answer questions from across all areas of AS content

Section C: 30 multiple choice questions

A-level Assessments

Paper 1	+	Paper 2	+	Paper 3
What's assessed Sections 1–5 and 6.1 (Periodic motion)		What's assessed Sections 6.2 (Thermal Physics), 7 and 8 Assumed knowledge from sections 1 to 6.1		What's assessed Section A: Compulsory section: Practical skills and data analysis Section B: Students enter for one of sections 9, 10, 11, 12 or 13
Assessed <ul style="list-style-type: none">• written exam: 2 hours• 85 marks• 34% of A-level		Assessed <ul style="list-style-type: none">• written exam: 2 hours• 85 marks• 34% of A-level		Assessed <ul style="list-style-type: none">• written exam: 2 hours• 80 marks• 32% of A-level
Questions 60 marks of short and long answer questions and 25 multiple choice questions on content.		Questions 60 marks of short and long answer questions and 25 multiple choice questions on content.		Questions 45 marks of short and long answer questions on practical experiments and data analysis. 35 marks of short and long answer questions on optional topic.

