

AS & A LEVEL PHYSICS

Course content

EXAMS BOARD

AQA

<http://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408/spec-at-a-glance>

Why A Level Physics?

- It's a stepping stone that develops your core knowledge for further study of Physics at higher level
- In developing this course outline, Universities were widely consulted to ensure that the content of this course is what you need to do well in university physics and beyond.

Why A Level Physics?

- A Level Physics is highly relevant in this 21st Century and beyond particularly for those who are interested in pursuing
 - Engineering
 - Mathematics
 - Sciences
 - Technology
 - Computing
 - Electronics
- at University and other higher institutes of learning

Is it the right course for you?

Essential requirements

- Students must have studied **triple science at GCSE level and obtained a B grade or above in each of the three science areas.**
- A student with **A grade and above in Core Science and Additional Science may be considered.**
- They should also feel very comfortable about manipulating numbers. At least an A grade in maths is advantageous. Physics is acknowledged to be the most demanding A Level Science subjects in terms of its mathematical content.

Desirables

- An interest in science!

Course pathways

- AS Physics course (1 Year)
- Qualification is linear. Meaning students would sit all the AS exams at the end of the AS course.

Full A Level Physics Course (2 Years)

- Qualification is linear. Meaning students will sit for all the A Level exams at the end of the 2 year course.

Course pathways

- The first year of the full A Level Physics course is the same as the AS Physics course.
- The topics covered in the first year are therefore referred to as **Core content**
- The topics covered in the second year are appropriately referred to as **“A Level only”**

Subject content

Core content

- Measurement and their errors
- Particles and radiation
- Waves
- Mechanics and materials
- Electricity

A Level only content

- Further mechanics and thermal physics
- Fields and their consequence
- Nuclear Physics
- Medical Physics*
- (* Optional topic)

Essential Mathematical skills

- Over all at least 40% of the marks in assessment for physics will require mathematical skills.
- Areas include the following but not exhaustive
 - Arithmetic and numerical computation
 - Handling data
 - Algebra
 - Graphs
 - Geometry and trigonometry
 - Use of Exponents and logarithms
 - Basic Calculus

Practical skills

- Whilst there is no more controlled assessment exams component in the new qualification, Practicals has become an essential component of the A Level physics curriculum.
- Practical skills and competency are examined as part of the main exams at both the AS and A level.

Practical Skills and competency

AS Level

- Use of apparatus and techniques
- AS required practical activities: A minimum of 6 core practicals skills
- Practical skills and competency to be assessed via written paper

A Level

- Use of apparatus and techniques
- A Level required practical activities minimum of 12 core practical skills
- Practicals skills and competency to be assessed in written papers
- A- Level practical skills to be assessed via endorsement

AS Level Physics Assessment (Exams)

Paper 1

- **What is assessed**
 - Core content
- **Assessed**
 - Written exam: 1 hour 30 minutes
 - 70 marks
 - 50% of AS
- **Questions**
 - 70 marks short & long answer questions split by topics

Paper 2

- **What is assessed**
 - Core content
- **Assessed**
 - Written exam: 1hour 30 minutes
 - 70 marks
 - 50% of AS
- **Questions**
 - Section A: 20 marks of short & long answer questions on practical skills & data analysis
 - Section B: 20 marks of short & long answer questions from across all areas of the AS content
 - Section C: 30 multiple choice questions

A Level Assessments: 3 Exams papers

Paper 1

- **What is assessed**
 - Core content + periodic motion
- **Assessed**
 - Written exams: 2 hours
 - 85 marks
 - 34% of A-Level
- **Questions**
 - 60 marks of short and long answer questions and 25 multiple choice questions

Paper 2

- **What is assessed**
 - Thermal physics, fields and their consequence & Nuclear physics
- **Assessed**
 - Written exam: 2 hours
 - 85 marks
 - 34% of A- Level
- **Questions**
 - 60 marks of short and long answer questions and 25 multiple choice questions

A Level Assessments: 3 Exams papers

Paper 3

- **What is assessed**
 - Section A: Compulsory section: practical skills & data analysis
 - Section B: Option topic
- **Assessed**
 - Written exam: 2 hours
 - 80 marks
 - 32% of A-Level
- **Questions**
 - 45 marks of short & long answer questions on practical experiments & data analysis.
 - 35 marks of short & long answer questions on optional topic.