



URSULINE HIGH SCHOOL
& WIMBLEDON COLLEGE
SIXTH FORM

PHYSICS

at Ursuline High School

LEVEL: A level

EXAMINATION BOARD: AQA

SPECIFICATION NUMBERS: 7407 (AS); 7408 (A2)

2021

URSULINE HIGH SCHOOL
CRESCENT ROAD
WIMBLEDON
LONDON SW20 8HA

020 8255 2688

enquiries@ursulinehigh.merton.sch.uk

**Deputy Headteacher and Assistant Headteacher Key Stage 5:
Mr Didier Adam & Mr Ben Barton**

WHAT WILL I STUDY IN THIS SUBJECT?

Year 1

The AS syllabus is broken up into 5 topics,
The five topics are:

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

Year 2

In the final year, there are 3 compulsory topics;

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

In addition to this the students must choose at least one of the special topics below:

- Astrophysics
- Medical physics
- Turning points in physics
- Engineering physics (re-branded Applied physics)
- Electronics.

This choice of special topics allows students with different interests choose the most relevant or interesting topic matter.

WHAT SKILLS AND INTERESTS DO I NEED FOR THIS SUBJECT?

You need to be interested in the big questions:

How did it all begin?

Why don't bridges fall down?

How is information sent digitally?

You will need good thinking skills and the ability to ask accurate questions. Good practical, experimental skills also required. Manipulating numbers to explain and enquire will also be developed on the course.

HOW WILL I BE ASSESSED?

Assessments - Linear Exam - all taken at end of A2

Paper 1 written exam: 2 hours 85 marks 34% of A-level

What's assessed Sections 1 to 5 and 6.1 (Periodic motion)

Questions 60 marks of short and long answer questions and 25 multiple choice questions on content.

Paper 2 Synoptic written exam: 2 hours 85 marks 34% of A-level

What's assessed (Assumed knowledge from sections 1 to 6.1) but focus on Sections 6.2 (Thermal Physics), 7 and 8

Questions 60 marks of short and long answer questions and 25 multiple choice questions on content.

Paper 3 written exam: 2 hours 80 marks 32% of A-level

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

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.

WHAT OTHER SUBJECTS COMBINE WELL WITH THIS SUBJECT?

Mathematics

Biology

Chemistry

Psychology

It is not essential to take an AS in Mathematics at the same time but this would definitely be helpful in sharpening your skills. Maths with mechanics has common ground with the Physics AS, as does Chemistry.

TO WHAT FURTHER OR HIGHER EDUCATION COURSES COULD THIS SUBJECT LEAD?

An A-level in Physics is an excellent introduction to many courses

Theoretical Physics - hypothesising about black holes

Applied Physics - there are many 'Physics with . . .' courses available - for example.

Physics with astronomy

Engineering courses - again a wide range are available, from sound engineering to marine engineering

Architecture

WHAT CAREERS COULD THIS SUBJECT LEAD TO?

Scientist - Physics has many thriving research disciplines

Design and engineering - every thing from mobile phones to ships needs careful design and application of physics principles

Finance and Accountancy.

RECOMMENDED READING:

Anything by Richard Feynman

Chaos by James Gleick

The New Science of Strong Materials or Why You Don't Fall Through the Floor by James Edward Gordon

A Brief History of Time by Stephen Hawking

USEFUL LINKS:

<http://advancingphysics.iop.org/>

<http://www.iop.org/activity/nexus/index.html>

<http://www.ph.surrey.ac.uk/>

<http://www.aqa.org.uk/physics-guide>

ENTRY CRITERIA

Please refer to the Entry Criteria Insert to understand the Pathway requirements.

The entry criteria for this subject is: Grade 6 in Physics OR Grade 7 in Combined Science, AND Grade 6 in Maths