ATHERTON INTERNATIONAL SCHOOL

PHYSICS A LEVEL

Course Overview

ABOVE: STUDENTS LEARN ABOUT THE LIFECYCLE OF STARS IN COSMOLOGY

Cambridge International

GENERAL CERTIFICATE OF SECONDARY EDUCATION (GCSE)

Cambridge International prepares school students for life, helping them develop an informed curiosity and a lasting passion for learning. They are part of the University of Cambridge, and are the chosen board for examination by Atherton International School.

Cambridge qualifications set the global standard for international education. They are created by subject experts, rooted in academic rigour and reflect the latest educational research. They provide a strong platform for learners to progress from one stage to the next, and are taken by nearly a million Cambridge students from 10, 000 schools in 160 countries annually.

THIS PHYSICS SYLLABUS AIMS TO ENABLE STUDENTS TO:

- ACQUIRE KNOWLEDGE AND UNDERSTANDING WHILE DEVELOPING PRACTICAL SKILLS
- LEARN TO APPLY THE SCIENTIFIC METHOD, WHILE DEVELOPING AN AWARENESS OF THE LIMITATIONS OF SCIENTIFIC THEORIES AND MODELS
- DEVELOP SKILLS IN DATA ANALYSIS, EVALUATION AND DRAWING CONCLUSIONS
- CULTIVATE ATTITUDES RELEVANT TO SCIENCE SUCH AS OBJECTIVITY, INTEGRITY & INITIATIVE
- UNDERSTAND THEIR RESPONSIBILITY TO OTHERS/SOCIETY AND TO CARE FOR THE ENVIRONMENT
- ENJOY SCIENCE AND DEVELOP AN INTEREST THAT MAY LEAD TO FURTHER STUDY.

Content Overview

PHYSICS

AS Level (Year One)

Candidates study:

- **Physical quantities and units**
- **Kinematics**
- **Dynamics**
- **Forces, density and pressure**
- **Work, energy and power**
- **Deformation of solids**
- **Waves**
- **Superposition**
- **Electricity**
- **D.C. circuits**
- **Particle physics**

A Level (Year Two)

Candidates study:

- **Motion in a circle**
- **Gravitational fields**
- **Temperature**
- **Ideal gases**
- **Thermodynamics**
- **Oscillations**
- **Electric fields**
- **Capacitance**
- **Magnetic fields**
- **Medical physics**
- **Astronomy and cosmology**
- **Alternating currents**
- **Quantum physics**
- **Nuclear physics**

PHYSICS AS

ASSESMENT OVERVIEW

ATHERTON
INTERNATIONAL SCHOOL

Grading

All candidates take two components. Candidates will be eligible for grades 9 to 1, where 9 is the highest grade

Paper 1

1 hour 15 minutes

15.5% of A Level

Externally assessed

Multiple Choice
40 Questions

Short-answer and structured questions based upon the Computer Systems portion of the course. All questions are compulsory.
No calculators are permitted.

Paper 2

1 hour 15 minutes

23% of A Level

Externally assessed

AS Level Structured Questions
60 Marks

Short-answer and structured questions and scenario-based question Questions will be based on the Algorithms, Programming, and Logic portion of the course. All questions are compulsory.
No calculators are permitted.

Paper 3

2 hours

11.5% of A Level

Externally assessed

Advanced Practical Skills
40 Marks

Two questions assess the AS Level practical skills in the Practical assessment section of the syllabus. The content of the questions may be outside the syllabus content. Paper 3 consists of two questions, each of 1 hour and each of 20 marks. Question 1 will be an experiment requiring candidates to collect data, to plot a graph and to draw conclusions. Question 2 will be an experiment requiring candidates to collect data and to draw conclusions, but may or may not include the plotting of a graph. In the second question, the experimental method to be followed will be inaccurate, and candidates will be required to evaluate the method and suggest improvements. The two questions will be set in different areas of physics. No prior knowledge of the theory will be required.

PHYSICS A LEVEL

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All candidates take two components. Candidates will be eligible for grades 9 to 1, where 9 is the highest grade

Paper 4

2 hours

38.5% of A Level

Externally assessed

A Level Structured Questions
100 Marks

Questions are based on the A Level syllabus; knowledge of material from the AS Level syllabus content will be required.

Paper 5

1 hour 15 minutes

11.5% of A Level

Externally assessed

Planning, Analysis and Evaluation
30 Marks

Questions are based on the A Level practical skills of planning, analysis and evaluation but may require knowledge of practical skills from the AS Level syllabus. The content of the questions may be outside of the syllabus content.