



Subject: *ADVANCED PHYSICS*

Exam Board: OCR

Levels available: AS (1 Year) and A2 (Additional 2nd year)

Subject Leader: Mr A Stell

Course Information:

* What do I need to know or be able to do before choosing this subject?

Advancing Physics is a new AS and A2 level course, reflecting physics as it is used today. At the end of the course, you will know more of what physics is about and its place in the world. For each year of the course, there is a Student's Book and CD-ROM. There is an Advancing Physics Website, <http://post16.iop.org/advphys/>, which will provide up to date information and material to support students. Students are expected to have studied GCSE Double Award Sciences or separate Physics and achieved grade A*-C.

* What does the course consist of and how will I be assessed?

AS (Advanced Subsidiary) Specification

This is the first half of the full A level course. If you and your teacher agree that it's best for you, you can take the AS level on its own during or at the end of Year 12. The final grade will count towards entry to Further/Higher Education.

The AS level is made up of three units:

Unit 1: Physics in Action **35% AS or 17.5% A level**

*Communication: Imaging, Sensing and Signalling
Designer Materials*

Assessment: Written examination (1 hour 30 mins.) in January

Unit 2: Understanding processes **35% AS or 17.5% A level**

*Waves and Quantum behaviour
Space and Time*

Assessment: Written examination (1 hour 30 mins.) in June

Unit 3: Coursework **30% of AS or 15% A level**

*Instrumentation
Research and presentation
Data handling*

Assessment: Internal assessment (final assessment in June)

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Course Information:

The ADVANCED LEVEL (AS + A2) Specification

The full Advanced level qualification is made up of the 3 AS Units plus 3 more Units studied at A2 level. If you decide to continue with the second half of the course in Year 13 you will study the following additional Units.

Unit 4: Rise and fall of the clockwork Universe: 10% of A2 level

Models and rules
Matter in extremes

Assessment: Written examination (1 hour and 10 minutes)

Practical Investigation – Coursework

7.5% of A2 level

Assessment: Internal assessment

Unit 5: Field and particle pictures

10% of A2 level

Fields and charges
Electromagnetic machines
Fundamental particles and probing matter
Radiation and risk

Assessment: Written examination (1 hour and 10 minutes)

Research Report – Coursework

7.5% of A2 level

Assessment: Internal assessment

Unit 6: Advances in Physics

15% of A2 level

Using physics ideas from the whole course

Assessment: Written examination (1 hour and 30 minutes)

*** How could I develop Key Skills by doing this course?**

As well as covering the study of **Physics**, the AS/A2 courses will enable you to develop key skills. Your teacher will let you know when a particular piece of work also accounts for Key Skills assessment as well as for **Physics** assessment. You will need to keep evidence of this work in a Portfolio for assessment later if you wish to gain a Key Skills qualification. During this course examples of key skills could include:

Communication: e.g. writing a report on the instrumentation project

Application of Number e.g. work on astronomy dealing with very large numbers

Information & Communication Technology e.g. use of computers as a modelling tool

Improving own learning & performance e.g. answering questions from the text and CD-ROM

Problem solving e.g. with the practical investigation

Working with others e.g. in practical investigations

*** What could I go on to do after the course?**

A degree in Physics, Engineering, Technology or any related Science course could be followed. Physics is highly regarded as a support subject with Geography, Design, IT, and would broaden an Arts curriculum.