

## A STUDENT'S GUIDE TO THE AS LEVEL IN SCIENCE FOR PUBLIC UNDERSTANDING

### What do I need to know or be able to do before taking this course?

You do not need any specific prior knowledge in order to study this subject.

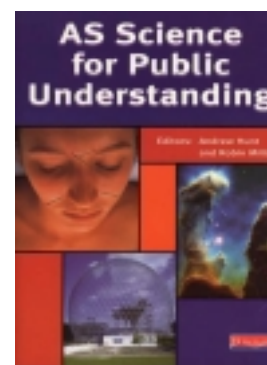
- It is **not** a practical science course; it involves visits and other work outside the classroom. Several areas covered in the course are developments of normal national curriculum work in science at GCSE but others are new. You will need to be prepared to integrate your knowledge of science with other approaches in order to understand how they relate to each other and how they contribute to the understanding of the issues being studied.
- You will need to develop an awareness and interest in historical and contemporary issues in science.
- You will need to be ready to think logically and constructively about significant current problems.
- You will need to be able to communicate effectively and research information from a variety of sources.

### What will I learn on this AS Level course?

During this course you will read, research, discuss and explore real issues.

The course aims to encourage you to:

- take an informed view of media reports about issues and events involving science and technology to develop your enjoyment and interest;
- develop and express your informed opinion on issues concerning science and technology, taking into account technical, economic, social and ethical aspects;
- make use of your understanding of science and technology in making decisions about personal lifestyle, such as use of energy for transport, and diet and health;
- learn how scientific knowledge is gained work by scientists, and the influence of social factors;
- appreciate the power of scientific explanations in helping us understand and control aspects of the natural world, and the nature of the limitations of scientific knowledge;
- argue knowledgeably about the quality of data, its interpretation and its implications for decisions and action;
- explore how technologies vary in relation to culture, economic system and level of development;
- gain experience of the Key Skills of Communication, Application of Number, Information Technology, Improving Own Learning and Performance, Working with Others and Problem Solving.



**A new textbook with everything you need for this course**

### **What kind of student is this course suitable for?**

This course will appeal to students who:

- have an interest in reading about and discussing a wide range of issues;
- enjoy expressing their opinions and justifying their comments;
- enjoy studying a subject that is relevant to their own lives and experiences;
- want to keep options open for further study.

The course is a suitable in combination with any advanced general or vocational subjects. The course is designed to:

- allow science students to explore how their chosen field of study operates in the real world;
- allow non-science students to use their skills studying scientific issues which matter to everyone;
- provide a new field of study with a fresh start for those beginning advanced level study and those changing courses in later years.

### **What examinations will I have to take to get my AS Level qualification?**

AS is short for Advanced Subsidiary. Most AS Levels are the first half of an A Level course but you take this AS on its own as part of your advanced Level package of qualifications.



*This course is a specification of the  
Assessment and Qualifications Alliance*

The AS in Science for Public Understanding consists of three units of assessment:

#### ***Unit 1 Issues in the Life Sciences, 1 hour 15 minutes (35%)***

You will be asked structured questions (short written answer) which ask about your studies and your own opinions in the following areas:

- infectious disease,
- health risks,
- medical ethics,
- alternative medicine,
- genetic diseases,
- genetic engineering,
- Darwin and the evolution debate.

#### ***Unit 2 Issues in the Physical Sciences, 1 hour 15 minutes (35%)***

You will be asked structured questions (short written answer) which ask about your studies and your own opinions in the following areas:

- using fuels,
- electricity supplies,
- air quality,
- fuels and the global environment,
- sources and effects of radiation,
- theories in cosmology.

### **Unit 3 Coursework (30%)**

You are required to submit two written reports:

- Study of a Topical Scientific Issue (1500 – 2000 words, 20%)
- Critical Account of Scientific Reading (500 – 800 words, 10%)

For your **study of a topical issue** you may take the opportunity to study an issue personal to yourself, or one with local relevance, if suitable. It is assessed for the way in which you research information, and seek, present and evaluate relevant evidence.

You must show that you are able to: research information, seek relevant data and discriminate among sources; present relevant evidence in a well-structured and readable report; weigh evidence, analyse views on an issue and draw personal conclusions from the evidence.

The purpose of the **account of reading** is to encourage you to discover the pleasure of reading popular science writing: fact or fiction. You are free to choose what to read but it should be related in some way to the general ideas about science and technology in the course.

Your account of scientific reading of a book, articles, or extracts is assessed for the way in which you provide a personal critical response which displays your understanding of the scientific ideas and concepts involved.

### **How can I develop my full range of skills by doing this course?**

As well as covering advanced study of Science for Public Understanding, this course will enable you to develop some Key Skills, which will be essential to you whatever you go on to do afterwards. The Key Skills you can develop during this course are listed below, together with some examples of how Key Skills can be used in the subject:

#### **Communication**

You might prepare a contribution to a discussion on an issue which requires a range of researched input, for example on different risks to health. Your coursework will provide two different types of written document and you might prepare a presentation for the rest of the group on your research.

#### **Application of number**

You might research data from scientific studies, for example of atmospheric pollution in your area over recent years, perform a series of analyses and present the results as a short class paper.

#### **Information technology**

You might make extended use of your IT skills in preparing a class presentation on your coursework research and in the final presentation of your written reports.

#### **Improving own learning and performance**

You might keep a log of your planning and organisation of the tasks involved in completing your coursework.

#### **Working with others**

You might work with a small group to organise the various tasks and collate the results of individual research on various aspects of a topic such as genetic modification in preparation for a class presentation and discussion.

#### **Problem solving**

You might undertake the planning and make all the necessary arrangements for a group visit to a local laboratory.

### **What could I go on to do at the end of my course?**

Students with AS level Science for Public Understanding have a wide range of possible career and higher education opportunities. You will learn and use a wide variety of transferable skills during the course. These include integrating your knowledge from a range of disciplines to bear on scientific issues and developing your critical awareness. These skills are in demand from employers and universities and colleges and are also valuable in their own right.

Science for Public Understanding, as part of an advanced level package, could form a good basis for university study in any arts or science based subject.

Many students will also use their qualification to go straight into employment rather than into higher education. A very wide range of occupations is open to students with an AS in Science for Public Understanding including the opportunity to receive further training in a range of different areas.

### **Further information**

<http://www.nuffieldfoundation.org/spu>