Oxford Cambridge and RSA Examinations

RECOGNISING ACHIEVEMENT

Science - Student Guide for Advanced Subsidiary/Advanced GCE Specifications

This course has been developed to offer a broad and balanced study of science. It aims to build on the knowledge, understanding and skills of science at GCSE and to help you broaden your Advanced Subsidiary or Advanced GCE programmes. Each module of the course will introduce you to key scientific principles that are placed within an appropriate environmental context. The modules cover topics that consider the natural environment, and human interaction with the natural world. These topics draw on scientific understanding from Biology, Chemistry, Physics, Earth Science and Environmental Science. The structure of the course is designed to reflect how our understanding of the world may rely on knowledge from more than one particular scientific discipline. Assessment of the AS and Advanced GCE Science course is by examination and coursework.

You may be intending to have no direct contact with science, or have limited contact with science in your further study or career. If you wish to continue to develop your scientific knowledge but without specialising in the study of the separate sciences then this course may suit you.

Before you start this course

You should have studied Science to Intermediate Level at GCSE or GNVQ or studied Biology, Chemistry or Physics to GCSE.

If you are embarking on a more scientific route, an AS level in Science will complement programmes of study where Biology, Chemistry and/or Physics are being taken. However, it should be noted that you are not allowed to take AS Science with any other AS that has the title Science in the same examination series. At Advanced GCE level, Science can not be taken with any other Advanced GCE with the title Science, Chemistry, Physics or Biology in the same examination series.

Adult learners who wish to return to education and study science (perhaps with a view to making a career change or progressing to Higher Education) will also find Science AS or Advanced GCE useful.

This Subject has 6 Units of Assessment:

- To get a certificate for Advanced Subsidiary (AS), you will need to have studied and been assessed on the three AS units.
- To get a certificate for Advanced GCE, you will need to have studied and been assessed on the three AS Units plus three further units, known as A2 Units.

Before taking the AS units of assessment you will study the following modules of work:

Module 2841 Science and the Natural Environment.

In this module you will learn about the structure of atoms, radioactivity, ecology and evolution. In all the modules of this specification, your study of key scientific principles will be set in appropriate environmental contexts. In this module it will be associated with satellite remote sensing and tropical rain forests. A 90 minute written examination (unit of assessment) will test your understanding of this module.

Module 2842 Science and Human Activity.

In this module you will learn about molecular kinetic theory, the atmosphere, force fields, chemical reactions and their rates, and enzymes. The contexts associated with your learning will be climate and climate change, atmospheric pollution, chemical and food manufacture, and electricity distribution. A 90 minute written examination (unit of assessment) will test your understanding of this module.

Module 2843/1 Interpreting Scientific Information.

Most environmental issues have a scientific basis. This module will help you to reach scientifically informed opinions about what you hear or read in the media. Your ability to apply your knowledge and understanding of Modules 2841 and 2842 to a selected piece of scientific information will be assessed in this module in a 60 minute written examination (unit of assessment).

Practical and investigative work in AS is assessed by means of coursework.

Before taking the A2 units of assessment you will study the following modules of work:

Module 2844 Science and Environmental Management.

In this module you will learn about sexual and asexual reproduction in plants, how organisms are adapted to their environments, population dynamics, genetic engineering, reversible processes and analytical techniques. The contexts associated with your learning will be selective breeding and the development of new varieties of plants, especially those suitable for use in sustainable agriculture, the management of water quality and environmental monitoring. A 90 minute written examination (unit of assessment) will test your understanding of this module.

Module 2845 Synthesis of Scientific Concepts.

It is important for scientifically informed members of the general public to be able to apply their understanding of science to situations which they encounter. In this module, you will use your understanding of all the other modules by applying it, and the general scientific skills you have learned, to selected environmental contexts. A 90 minute written examination (unit of assessment) will test the synoptic nature of your understanding of this module.

Module 2846/1 Science and Global Processes.

In this module you will learn about linear and simple harmonic motion, chemical bonding and the properties of materials, plate tectonic theory and the ocean circulation system. The contexts associated with your learning will be about global processes and their time-scales, and about the importance of water to climate. A 60 minute written examination (unit of assessment) will test your understanding of this module.

Practical and investigative work in A2 is assessed by means of coursework.

The assessment structure for Science is:

Unit 2841
Science and the Natural Environment

Examination: 90 marks, compulsory short answer questions and questions requiring a longer answer.

+

Unit 2842
Science and Human Activity

Examination: 90 marks, compulsory short answer questions and questions requiring a longer answer.

+

Unit 2843/1
Interpreting Scientific Information

Examination: 60 marks, compulsory short answer questions based on the interpretation of scientific information in the form of, for example, a short article.

+ **Unit 2843/2**
Coursework

Assessment of 4 practical skills.

= **AS**

+

Unit 2844
Scientific and Environmental Management

Examination: 90 marks, compulsory short answer questions and questions requiring a longer answer.

+

Unit 2845
Synthesis of Scientific Concepts

Examination: 90 marks, compulsory short answer questions and questions requiring a longer answer and questions requiring an extended answer.

+

Unit 2846/1
Scientific and Global Processes

Examination: 60 marks, compulsory short answer questions.

+ **Unit 2846/2**
Coursework

Assessment of 4 practical skills.

= **A2**

For more information, please view the OCR website: **www.ocr.org.uk**
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