

A Level

# Biology

Eduqas



A 2 year A level linear course with the opportunity to complete AS level after 1 year (AS marks do not count towards A level grade)

Students who choose another science A level or Maths in addition to Biology tend to perform better than those who select Biology as their only science.

## Course Content

This new linear course which has been developed by Eduqas (WJEC), in consultation with staff at the college, maintains the best elements of the Biology and Human Biology courses which it replaces. Both of these courses were extremely popular and students achieved very high grades, for example 19% of Biologists were awarded A\* in 2015.

The new course has a greater emphasis on analysis and interpreting results than those it replaces. It covers the main human body systems and compares them to a range of other animals, frequently considering things from an evolutionary perspective. It also explores applied topics such as the mode of action of drugs, biosensors, stem cells, cloning and genetic manipulation.

In the first unit, we study cell structure, as revealed by the electron microscope, and the way in which molecules interact with cell membranes. We experiment with the action of enzymes and explore the structure of the other main biological molecules.

The second unit of the course contains an overview of classification. We consider biodiversity in the context of evolution. We investigate human circulation, gas exchange and digestion and compare them to the systems occurring in other organisms.

The second year of the course includes the biochemistry of respiration and photosynthesis, human and plant reproduction and global population issues. We cover the main sampling techniques used in ecology and also look at genetics and microbiology. We study the human nervous system, hormones and the homeostatic role of the kidney. A variety of applications of biotechnology are included, such as gene therapy and DNA fingerprinting.

There are 3 different options which complete the second year, giving you the chance to choose to study further 'Human health and Disease', 'Human skeletal system and muscle physiology' or 'Neurobiology and behaviour'.



The college is large enough to run all three options, allowing you to select whichever one best fits with your interests and career aspirations. Eduqas is the only exam board that provides options in its course.

## Methods of Teaching

The Biology department was graded outstanding (grade 1) by OFSTED at the last inspection and our highly supportive drop-in workshop was cited as an example of good practice. There are 13 full time teachers who only teach A Level Biology to over 1000 students.

The course is delivered using a wide range of teaching styles. There is experimental work virtually every week and lessons also include group work, discussions, short talks and poster / powerpoint presentations by students. Key facts and concepts are delivered by written notes, interactive hand outs, videos, practical demonstrations and extensive use of ICT. You will be expected to read from texts and use the college's intranet/emails. In addition to timetabled lessons, workshops are provided every day, when teaching staff and student mentors are available to give one to one assistance. An experimental biology group and an extension group meet weekly for students who are interested in biology beyond the A level curriculum. We often invite experts to give lunchtime talks and seminars. Recent talks have included auditory physiology, bio-engineering and medical ethics.

# Biology

You will be expected to consolidate and extend your knowledge by reading the set texts, researching the internet and using the comprehensive support material on the college intranet. You may wish to take up optional extra courses which we run in Large Animal Handling and Human Anatomy and Physiology. The department also offers students the opportunity to complete an extended project in their A2 year. There is a link to Southampton University for laboratory work at a post-graduate level which can be associated with this. Students are encouraged to enter for the National Biology Olympiad and 3 have reached the international finals in recent years. In 2012, we were recognised as the 'Best UK School' in this competition. The success of our students in gaining such an impressive number of A\* grades, places in medical school, Olympiad medals and more, is largely due to their enthusiastic uptake of these opportunities.

## Methods and Patterns of Assessment

The A level is assessed in June of the second year via 3 written 2 hour exams. These are mainly short-answer papers with an essay title comprising the last question. The papers contain questions which test students' knowledge of experimental work and mathematical skills in Biology. Practical work is also monitored during the course and a student's ability will receive endorsement, although this will not contribute towards the grade.

Students can take 2 AS examinations in May/June of their first year, each lasting of 90 minutes. This facility makes it possible to stop studying biology after a year and still have a qualification.

## Financial Implications

We anticipate that you will need to buy a £20 textbook at the start of each year, and an additional photocopying charge will be made to cover the cost of providing booklets of support material (£10 at the start of each year). Some second hand texts will be available from student services who also administer a Support Fund for those who have difficulty meeting course costs

There are college trips available, run jointly with the Environmental studies department and, in recent years, students have visited Belize, Kenya, Madagascar and Guyana.

## Career Possibilities

This course can lead to careers in an enormous variety of areas including medicine, dentistry, midwifery, nursing, radiography, physiotherapy, pharmacy and other biomedical and healthcare vocations. It can also provide the foundation for the many purely scientific branches of the biological sciences, such as physiology, biochemistry, and pharmacology or more applied fields such as environmental science, food technology, agriculture, ecology, horticulture or forensics. It provides an excellent basis for many sports related degrees and is an essential entry requirement for veterinary medicine or marine biology.

## Minimum Entry Requirements

**5 GCSE's at grade A\* - C, including English and one of the following combinations:**

- B in Additional Science and a 6 in Maths GCSE
- B in Biology or Chemistry or Physics and a 6 in Maths GCSE

Apply online: [www.psc.ac.uk/apply](http://www.psc.ac.uk/apply) t: 01962 857555 e: [admissions@psc.ac.uk](mailto:admissions@psc.ac.uk)

Peter Symonds College, Owens Road, Winchester, Hampshire SO22 6RX