

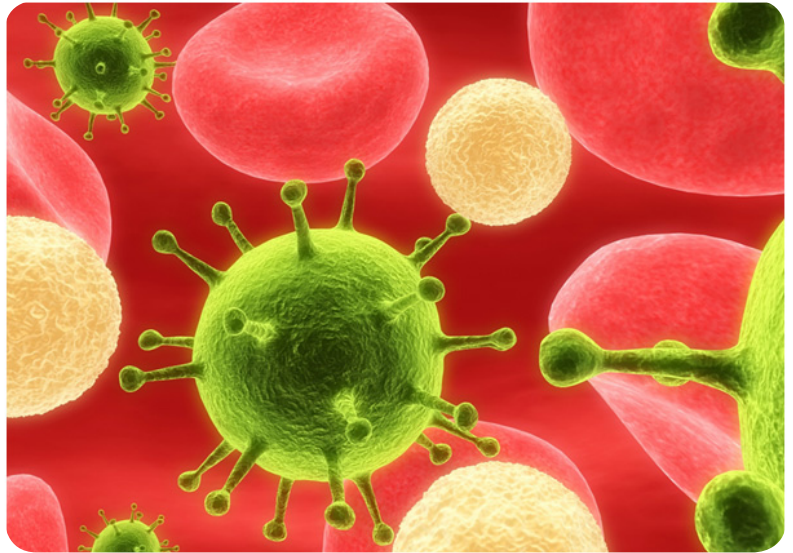
# Biology

## A Level

**Head of department:** Hilary Thomson

**Email:** hthomson@esher.ac.uk

**Exam Board:** EDEXCEL



### **What is this subject about?**

The course is designed to engage and inspire students by showing how an understanding of many contemporary issues requires a grasp of fundamental biological ideas. It will help you appreciate how society makes decisions about biology-related issues and how biology contributes to the success of the economy and society.

### **For the AS level you will study:**

In the first year, the topics are 'Lifestyle, health and risk'; 'Genes and health'; 'The voice of the genome' and 'Biodiversity and natural resources'. Through these topics you will learn about biological molecules, cell structure, DNA, genetics, the circulatory system, heart disease, diet, the use of plants and biodiversity. There is an emphasis on practical work in the laboratory. You will also spend half your lessons in an IT room as computers play an important role in the delivery of the course.

### **For the A2 level you will study:**

In the second year, the topics are 'On the wild side'; 'Infection, immunity and forensics'; 'Run for your life' and 'Grey matter'. Through these topics you will learn about ecology, evolution, diseases such as HIV and TB, muscles, control in plants and mammals, and brain disorders and their treatment. As in the first year, there are many opportunities for discussing ethical issues such as the implications of The Human Genome Project and GM organisms and the use of drugs in sport. There is a residential field trip in the first term of the second year during which you will carry out your coursework investigation.

### **How is the course assessed?**

20% coursework: In the first year you write a report on a visit to a site of biological interest; in the second year you carry out an individual ecological investigation which you devise and carry out on the residential field trip. 80% written examinations: Two exams in the first year and two exams in the second year.

### **What skills will I need and develop on this course?**

You will use your knowledge and understanding to present scientific ideas and arguments, both in writing and orally, and you will use ICT to answer scientific questions. You will develop experimental skills including microscope use, analysis and interpretation of data, and evaluation of methodology and data. You will discuss ethical issues of applications of biology in society.

### **Subject combination advice:**

To progress to most degree courses related to Biology it is essential to study Chemistry at A level. Maths and Physics go well with Biology, as do Psychology, Geography and Geology.

### **What can the course lead to in terms of higher education and future careers?**

Biological Science (but read note on Chemistry above), Sports Science, Sports Rehabilitation, Pharmacy, Medicine, Dentistry, Veterinary Science, Physiotherapy, Occupational Therapy, Nursing, Agriculture.

### **What are the formal entry requirements for this course?**

A level Biology is a strongly theory based course that is assessed by exams and builds directly on GCSE work in Biology, Chemistry and Maths. National evidence suggests it is difficult to succeed unless you have an appropriate base of knowledge and a good track-record of success in exam based courses at GCSE. We will be flexible to particular individual circumstances where this is appropriate. However to ensure you have a reasonable chance of success our recommendation is at least **BB in GCSE Science and Additional Science (or BB in GCSE Biology and Chemistry) together with C in GCSE Maths (Higher Level)**. Applied Science or Additional Applied Science or non-GCSE Science qualifications are not suitable as preparation for A level study.

### **Are there alternative routes forward in Science?**

If you are headed towards Science but are finding it tough going to achieve GCSEs at the level we recommend, you should be looking at Applied A level or BTEC / OCR National Science as well. Applied A level and BTEC/OCR National courses provide well established routes to university and employment. The difference is that they are assessed by coursework and you can check your work with your teachers as you go along. You don't have to solve problems under exam conditions at the end relying on memory work. At Esher we offer these courses in Health & Social Care, Media, Sports & Leisure and Art & Design. Larger colleges offer these courses in Science as well. However these are popular courses and fill up quickly. You need to apply for them now to have a place on one of them should you need it when you get your GCSE results.

### **What extra support / enrichment activities are on offer?**

Although the emphasis is very much on students taking responsibility for their own learning, the Biology Department supports students by running regular revision sessions before each exam. In addition to a visit to a site of biological interest that all students go on for their first year coursework, we offer a number of optional external talks and visits, for example to Surrey and Reading Universities and the Natural History Museum.

### **Can I do Human Biology at Esher?**

No. Because the emphasis is on humans in Biology syllabuses now, very few centres offer Human Biology as a separate course.

### **Do I need to take Chemistry alongside Biology?**

You don't have to, but you should be aware that there is a lot of Chemistry in the Biology course, so it does really help. Plus, few universities take students on to a Biology degree without Chemistry. (Yes, I know a Biology degree might be the last thing on your mind at this stage, but you wouldn't be the first student to have changed their mind!)



**ESHER**  
COLLEGE

Weston Green Road, Thames Ditton, Surrey, KT7 0JB  
Tel: 020 8398 0291 Fax: 020 8339 0207  
Email: [eshercollege@esher.ac.uk](mailto:eshercollege@esher.ac.uk)

