

Biology

Awarding Body

Edexcel

Course Level

AS and A2 level

Course Leader

Mrs Kearsley

Entry Requirements

GCSE Core Science and Additional Science (Higher Tier studied - grades CC minimum)

Course Description

AS Level Course 8BI01	A2 Level Course 9B01
<p>Unit 1: Lifestyle, Transport, Genes and Health</p> <ul style="list-style-type: none"> • structure and function of carbohydrates, lipids and proteins; enzyme action • structure and properties of cell membranes; passive and active transport • structure and role of DNA and RNA replication; protein synthesis • monohybrid inheritance • gene mutations • principles of gene therapy; social and ethical issues. <p>The content is delivered in two topics:</p> <p>Topic 1: Lifestyle, Health and Risk Topic 2: Genes and Health</p> <p>Assessed by 1h 15 min written paper 40% of the total AS GCE marks 20% of the total A2 GCE marks</p>	<p>Unit 4: The Natural Environment and Species Survival</p> <ul style="list-style-type: none"> • photosynthesis; energy transfer within ecosystems • evidence for global warming • evolution through natural selection and speciation • nutrient recycling • DNA profiling and PCR • structure of bacteria and viruses • infectious diseases (e.g. .AIDS and TB) and immunology. <p>The content is delivered in two topics:</p> <p>Topic 5: On the Wild Side Topic 6: Infection Immunity and Forensics</p> <p>Assessed by 1 hour 30 min written paper 20% of the total A level marks</p>
<p>Unit 2: Development, Plants and the Environment</p> <ul style="list-style-type: none"> • cell structure and ultra-structure of eukaryote and prokaryote cells: cell specialisation • the role of meiosis • genotype and environmental influence • stem cell research and its implications • biodiversity, adaptations and natural selection • principles of taxonomy • plant cell structure • transport of water in plants • uses of plant products 	<p>Unit 5: Energy, Exercise and Coordination</p> <ul style="list-style-type: none"> • ATP, glycolysis, anaerobic/aerobic respiration • control and functioning of heart; ventilation and cardiac output • homeostasis • the nervous system • impact of exercise on body, and improving performance • hormonal coordination • brain structure and development

<p>The content is delivered in two topics:</p> <p>Topic 3: The voice of the genome Topic 4: Biodiversity and Natural Resources</p> <p>Assessed by 1h 15 min written paper 40% of the total AS GCE marks 20% of the total A2 GCE marks</p>	<ul style="list-style-type: none"> • imbalances in brain chemicals • Human Genome Project. <p>Topic 7: Run for your Life Topic 8: Grey Matter</p> <p>Assessed by 1 hour 45 min written paper 25% of the total A level marks</p> <p>A third of the marks are related to specified pre-released reading.</p>
<p>Unit F213: Practical Biology and Research Skills</p> <p>Students write a report of between 1500 and 2000 words, either a record of a visit to a site of biological interest or a report of research into a biological topic. Students' practical skills will be assessed by the teacher against criteria provided in the specification.</p> <p>20% of the total AS GCE marks 10% of the total A2 GCE marks</p>	<p>Unit 6: Practical Biology and Investigative Skills</p> <p>Students will complete a written report of an experimental investigation, which they have devised and carried out.</p> <p>10% of the total A level marks</p>

The enjoyment factor

Biology is the scientific study of life. We are living things ourselves so biology is about us too! Discovering how your body works and fits in with other living things is fascinating – hopefully you already enjoy this aspect of biology. During your AS course, you will get the chance to delve deeper into *why* things are the way they are. You'll be surprised at how much you already know from GCSE. It can be very satisfying to really grasp the more difficult concepts and the links between them.

Most of us enjoy a good medical story and so much of AS biology is about the human body – how it works, its health and diseases. If you prefer more up-to-date, technological topics, AS biology covers cutting edge issues too. These can include DNA technology, which can even make news headlines! However if you are more *hands-on*, then biology at AS is also very much about seeing and doing.

What to take with Biology....

Chemistry - essential if you want to study any Biological Science, Medicine, Dentistry and Veterinary Science.

PE - there are useful links with the physiology in Biology

Any other A level - the skills you develop in Biology are highly regarded.