



Biology & Life Sciences Course Key Facts

Location	Online (live, not pre-recorded)
Class size	Maximum 15 students
Ages	15-18
Fees	£995 (2 weeks)
Dates	June - August (see our booking form for the latest availability)
Timings	Live tutorials take place from 1-3pm UK time
Outcome	Certificate of Achievement and personalised Letter of Recommendation

Biology & Life Sciences Course Outline

Class	Class Content and Lesson Objectives
1	<p>Introduction to Biology <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">● Fundamentals of Biology, including the basic principles and concepts that form the foundation of the field.● The scientific method and the importance of experimentation in biology, including formulating hypotheses, designing experiments, collecting and analysing data, and drawing conclusions.● The history of biology and the contributions of key scientists. such as Charles Darwin and his theory of evolution, Gregor Mendel and his experiments on inheritance, and Louis Pasteur and his discoveries in microbiology. <p>Hands-on Research Project <i>Students will be able to:</i></p> <ul style="list-style-type: none">● Receive a brief on research project and presentation in final class● Familiarise themselves with the guidelines and scoring criteria



2	<p>Cells <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">• The structure and function of cells, including the organelles and their roles within the cell.• The role of cells in maintaining homeostasis, such as regulating temperature, pH levels, and nutrient balance.• The different types of cells and their functions, including prokaryotic and eukaryotic cells, plant and animal cells, and specialised cells like nerve cells and muscle cells.
3	<p>Genetics <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">• The structure and function of DNA, including the double helix structure and the base pairing rules.• The role of genes in determining traits, such as eye colour, height, and susceptibility to certain diseases.• The mechanisms of inheritance and how traits are passed from parents to offspring, including Mendelian inheritance patterns and the concepts of dominant and recessive alleles.
4	<p>Evolution <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">• The theory of evolution and its importance in biology, including the concept of common descent and the role of natural selection.• The mechanisms of evolution, including natural selection, mutation, and genetic drift, and how these processes lead to changes in populations over time.• The evidence for evolution, including the fossil record, comparative anatomy, embryology, and molecular genetics.
5	<p>Ecology <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">• The study of interactions between organisms and their environment, including concepts such as symbiosis, predation, and competition.• The levels of organisation in ecology, from individual organisms to populations, communities, and ecosystems.• The role of energy and nutrients in ecology and the flow of matter through an ecosystem, including concepts like food chains, energy pyramids, and biogeochemical cycles.
6	<p>Biodiversity and Conservation <i>Students will be able to understand:</i></p> <ul style="list-style-type: none">• The diversity of life on Earth and the classification of organisms, including the hierarchical system of taxonomy.• The importance of biodiversity and the threats to biodiversity, such as habitat loss, pollution, and climate change.• The role of conservation in protecting biodiversity, including the establishment of protected areas, conservation strategies, and the importance of sustainable practices.



7	Human Biology <i>Students will be able to understand:</i> <ul style="list-style-type: none">• The structure and function of the human body, including the major organ systems such as the circulatory, respiratory, and digestive systems.• The role of the different systems of the human body in maintaining health and homeostasis.• Common diseases and disorders and the role of genetics in human health, such as genetic predispositions to certain diseases and the impact of lifestyle factors on health.
8	Microbiology <i>Students will be able to understand:</i> <ul style="list-style-type: none">• The study of microorganisms, including bacteria, viruses, fungi, and protists, and their classification and characteristics.• The role of microorganisms in the environment and in human health, including their role in nutrient cycling, decomposition, and disease.• The importance of antibiotics and the rise of antibiotic resistance, including the mechanisms of antibiotic action and the impact of misuse and overuse of antibiotics.
9	Biotechnology <i>Students will be able to understand:</i> <ul style="list-style-type: none">• The use of biological processes to produce goods and services, such as the production of pharmaceuticals, biofuels, and genetically modified organisms.• The application of biotechnology in medicine, agriculture, and industry, including techniques such as genetic engineering, DNA fingerprinting, and fermentation.• The ethical considerations of biotechnology, including the potential risks and benefits, the importance of informed consent, and the need for regulation and oversight.
10	Final project <i>Students will be able to:</i> <ul style="list-style-type: none">• Present their final research projects• Receive peer and tutor feedback to enhance their research Course Review and Conclusion <ul style="list-style-type: none">• Review of key course concepts• Q&A with the tutor• Exploring careers in biology and related fields• The ethical considerations of biological research and its application• Conclusion and next steps for aspiring Biologists

Next Steps

We'd love to welcome you to our Biology & Life Sciences online course! In order to secure your place, the next step is to apply [by clicking here](#).



If you have any questions, please don't hesitate to contact Stephanie on 0044 1865 522 166, or by email on hello@oxfordscholastica.com.