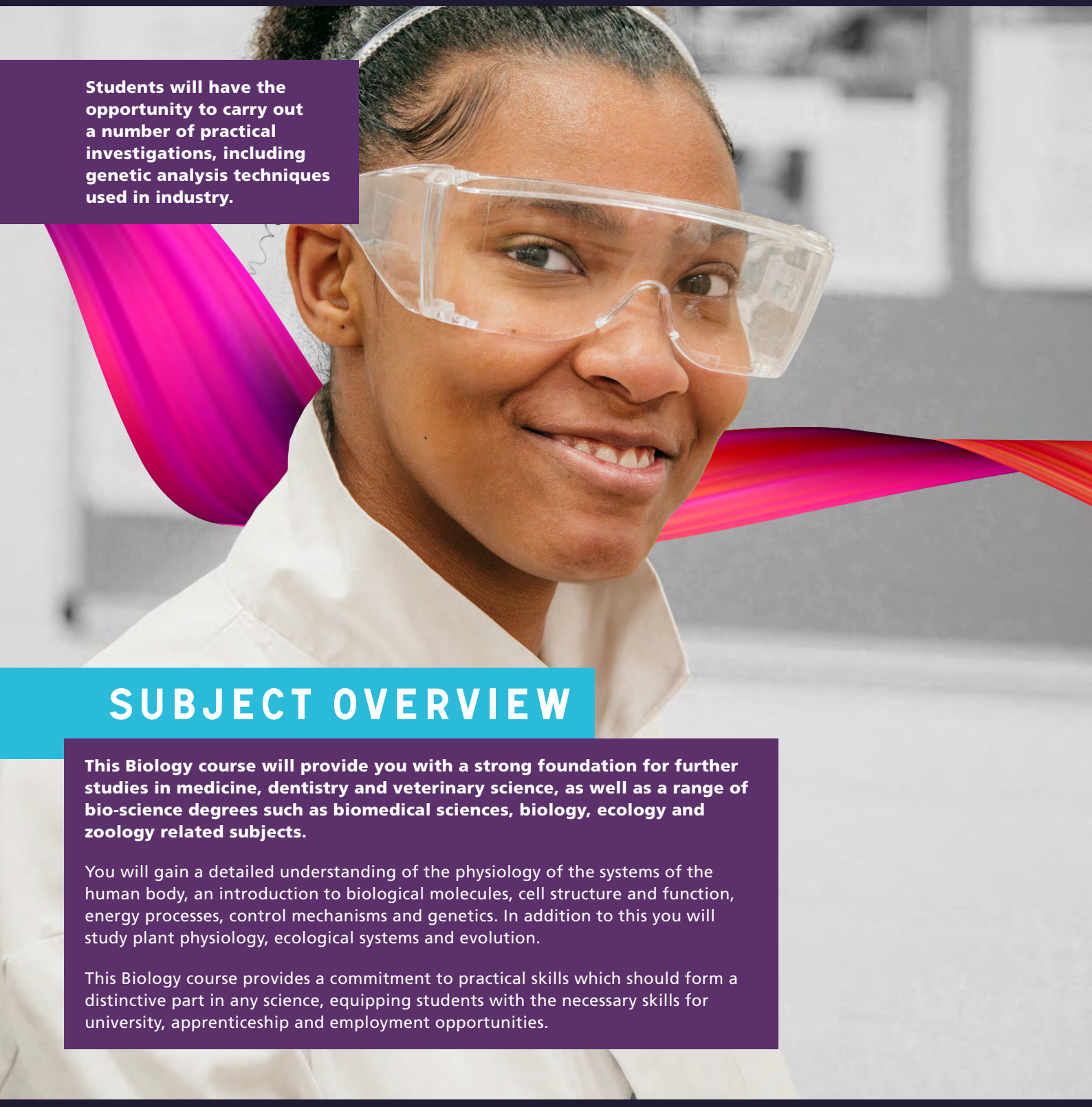
BIOLOGY

QUALIFICATION: A LEVEL

EXAM BOARD: AQA



Students will have the opportunity to carry out a number of practical investigations, including genetic analysis techniques used in industry.

SUBJECT OVERVIEW

This Biology course will provide you with a strong foundation for further studies in medicine, dentistry and veterinary science, as well as a range of bio-science degrees such as biomedical sciences, biology, ecology and zoology related subjects.

You will gain a detailed understanding of the physiology of the systems of the human body, an introduction to biological molecules, cell structure and function, energy processes, control mechanisms and genetics. In addition to this you will study plant physiology, ecological systems and evolution.

This Biology course provides a commitment to practical skills which should form a distinctive part in any science, equipping students with the necessary skills for university, apprenticeship and employment opportunities.

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YEAR ONE COURSE CONTENT

You will begin by investigating the structure and properties of biological molecules and move on to a study of cell ultrastructure through microscopy. This is followed by an introduction to the workings of the immune system. You will then be taken through an in-depth study of the respiratory and cardiovascular systems in relation to gas exchange and transport mechanisms in both plants and animals.

For the latter part of the course in year one, you will explore how DNA is responsible for the variation between organisms within and between species which leads to developing an understanding of evolution and natural selection. This is finally applied to studies in classification and biodiversity.

A compulsory field trip at the end of the second term is designed to train you in the practical techniques of ecology field work. Six compulsory practicals (internally assessed) will be undertaken which form a basis for examination at the end of the second year. Basic study skills and presentations will be encouraged and will form an important area of support throughout the course.

The new curriculum in Biology means that for A level students, qualifying exams for first and second year studies are taken at the end of the second year. Students wishing to study to AS Level only will study alongside the A level students for the first year, but will take their qualifying exams at the end of their first (and only) year.

YEAR TWO COURSE CONTENT

The second year begins with an introduction to the physiology of the nervous system, hormones and their functions, followed by kidney and liver function.

You will then investigate the biochemical mechanisms of respiration and photosynthesis, before moving on to genetic processes such as cellular control, mitosis and meiosis, followed by analysis and evaluation of genetic engineering techniques. The course ends with investigations into ecology and conservation.

You will attend a compulsory field trip connected with advances in genetic engineering and the human genome project, and you will have the opportunity to attend a day long biology conference in London.

WHAT DOES THIS COURSE PREPARE ME FOR?

You could go on to study one of a range of subjects at degree level, including medicine, dentistry, veterinary science, biology, zoology, ecology, biomedical sciences and healthcare.

COURSE SUPPORT AND ENRICHMENT

You will be supported throughout the year by experienced sixth form Biology teachers as well as the pastoral Bedford Sixth Form team.

Over the two-year course, there will be the chance to partake in numerous enhancement activities such as visits to the Sanger Institute, attend up to the minute Biology in Action talks at Warwick University and experience an ecological day trip to try out biological techniques in situ.

ASSESSMENT

An initial assessment at the beginning of the year will ensure that your skills are up to the required standard. A bridging course will support you if some skills needs are identified.

You will be assessed through:

- three exams of 2 hours each in length
- the successful completion of six practicals in your first year and six further practicals in the second