

# Life and Health Science.



## Examination Board: CCEA

Students must have a grade C\* or above in GCSE Biology and Chemistry or grade B in Single Award Science. It is expected that students also have C pass or above in GCSE English and GCSE Mathematics.

The course will allow students to study how science is applied in many different types of professions and industries. It aims to encourage students to develop their interest and enthusiasm for Science including the improvement of practical, mathematical and problem solving skills and the development of knowledge and understanding of scientific issues. During the course students will be given the opportunity to learn how science contributes to our lifestyle, the environment in which we live and how the sciences contribute to the success of the economy and society. The course follows a programme of learning which is practically-based and which improves experimental techniques. Students work independently, carrying out practical tasks similar to those undertaken by employees working in science-based industries. Progress and achievement throughout the course is monitored by a programme of continuous assessment and ICT will be used for researching information, monitoring, recording investigations and presenting work.

## The course content:

Single award Weightings	Brief Description	Areas of science studied
<b>AS Unit 1</b> <b>33.34% of AS</b> <b>13.34% of A2 level</b> <b>Internal Assessment</b>	<b>Experimental Techniques (Portfolio of evidence)</b> This unit gives a general introduction to the use of scientific techniques in the lab. Students carry out a range of practical activities and present these as a portfolio of practical reports.	General practical skills in the laboratory relevant to Biology, Chemistry and Physics.
<b>AS Unit 2</b> <b>33.34% of AS</b> <b>13.34% of A2 level</b> <b>External written exam.</b> <b>1h 30 min</b>	<b>Human Body Systems</b> In this biology unit, students consider some essential knowledge regarding how the human body systems work and how they support good health.	The structure and function of the cardiovascular and respiratory systems; the processes of respiration and homeostasis and investigating the roles of nutrition and physical exercise in maintaining health.
<b>AS Unit 3</b> <b>33.34% of AS</b> <b>13.34% of A2 level</b> <b>External written exam</b> <b>1h 30 min</b>	<b>Aspects of Chemistry in Industrial Processes</b> This unit explores the work of the industrial chemist	The development of skills in performing calculations in chemistry, applying knowledge of energetics, equilibrium and kinetics in the industrial manufacture of chemicals is undertaken.

Single award Weightings	Brief Description	Areas of science studied
<b>A2 Unit 1</b> 20% of A2 level Internal Assessment	<b>Scientific method, investigation, analysis and evaluation</b>	Experimental research portfolio to demonstrate an understanding of what makes an investigation scientific
<b>A2 Unit 2</b> 20% of A2 level External written exam. 1h 45 min	<b>Organic Chemistry</b>	Learn about nomenclature, structure and isomerism within organic compounds. This will include the alkanes, alkenes and alcohols, common polymers their uses and disposal. Students will prepare a simple organic compound and evaluate its purity.
<b>A2 Unit 3</b> 20% of A2 level External written exam 1h 45 min	<b>Genetics, stem cell research and Cloning</b>	Learn about the make-up of deoxyribonucleic acid (DNA) and how evidence for its structure was determined. Students will evaluate the social, ethical and economic implications of genetic engineering and relate these to modern day uses of genetics in the form of genetic fingerprinting and stem cell technology.

### **Career prospects**

Single Award GCE Life and Health Sciences can be used in conjunction with other subjects outside the science department to gain entry to a wide range of careers. This may include non Science subjects or Science related courses e.g Health & Social care and/or Sports Science. This applied qualification responds to the identified need to support a growing 'Life and Health Sciences' sector in Northern Ireland, worth an estimated £800 million per annum to the local economy (25% of Northern Ireland's total economic output). This course was developed as a result of findings in the 2015 NI MATRIX report which identified the need to develop a future workforce with the scientific skills enabling this sector to thrive within Northern Ireland.

There is an extremely wide variety of employment opportunities for those interested in science. The Health and Life Science qualification allows students to gain ideas about employment opportunities in science and prepare for courses in a range of universities and in further education. The career options available cover a vast choice of science disciplines including a wide array of STEM opportunities. Those who study this course can also go on to work in the healthcare sector, dieticians, ecologists, technicians and research scientists. In fact, science-based careers form one of the largest employment areas in the UK.