



Level: Level 3 Cambridge Technical Extended Certificate in Laboratory skills

Course Outline

This course is the equivalent of 1 A Level. It is aimed at students who are considering a vocational career in science and wish to build up the key knowledge and practical skills required. This course will help to prepare you for the challenges you will face in higher education or employment.

Who would be a successful student of science?

- This course will appeal to students who:
- Have a genuine interest in science but may not have the necessary grades to access biology, chemistry and physics A levels
- Enjoy working in a team
- Enjoy working in a variety of ways and producing different types of work for assessment

Career Opportunities

You will find this course useful if you wish to follow a career in the following areas:

- Apprenticeships with local firms such as GSK
 - Science technicians, Healthcare based careers
 - Science organisations or organisations that use science
 - Scientific analysts,
 - Working in the chemical industry or a scientific laboratory
- It can also provide a progression route into higher education.

Course Structure

Units – completed in year 12

1. Science Fundamentals

A thorough understanding of scientific principles and practices is essential for science technicians. Knowledge learnt in this unit will create a solid foundation in the fundamentals of science that students will be able to build on in their further study and provide them with greater depth of knowledge and practice in their chosen specialisms.

2. Laboratory Techniques

The aim of this unit is to provide students with a good grounding in working in a laboratory. This is a general skills unit and covers generic skills required by technicians working in any kind of scientific laboratory, including working for an industrial company, the NHS, contract analysis of environmental samples and working in the education sector. Students will learn about the roles and duties of a scientific technician and the systems used to ensure the effective operation of a laboratory. Students will understand the importance of health and safety in the laboratory and know how to carry out and record the outcomes of standard laboratory procedures.

Units completed in Year 13

6 Control of Hazards in the Laboratory

Running a research lab is a challenge. In all the hustle of loading the autosampler, pipetting, pouring, and mixing for research experiments, worker health and safety can be overlooked.

This unit presents an overview of the most common hazards encountered in typical research labs and will help students maintain a safe work environment. It also links to many other units within the qualification and students can apply skills in the context of the practicals they will carry out elsewhere.

18 Microbiology

Microbiology is the study of microorganisms. Microorganisms affect every aspect of life on Earth. Some microorganisms cause disease but the vast majority are completely harmless.

In this unit students will learn about the commercial use of microorganisms in food production and in medical microbiology. They will also develop a range of practical manipulative skills, including aseptic technique and those used in bacterial identification, which will enable them to work safely and competently in a microbiology laboratory.

21 Product Testing techniques

Consumer products are rigorously tested and regulated both before being allowed to be sold and after sale. Many cleaning, medical, hygiene and food products are bought directly “off the shelf”.

In this unit students will have the opportunity of using the knowledge and skills they have gained in the units 1 ‘Science Fundamentals’ and unit 2 ‘Laboratory Techniques’. Students will use a range of laboratory techniques in their investigations from inception, through to testing products.

How will I be assessed?

Units 1 and 2 are assessed through examinations. Other units will be internally assessed through individual assignments.