Science
Pearson Level 3 Forensic Science and Criminal Investigation

Entry Requirements: English 5, Maths 5, Science Combined/Triple 5 as well as two other GCSEs at 5 or above.

The main purpose of this two year course is to provide learners with the knowledge, understanding and skills to support progress to higher education or straight into employment in areas of forensics. It is also good for those wishing to study further in the areas of environmental science, clinical science, toxicology, criminology and law.

The course comprises of 6 units and is equivalent to a 1.5 A-levels. Each unit has a clear purpose which focuses the learning of scientific knowledge, understanding and skills in a meaningful context.

Year 1

Principles and applications of Science - This unit covers some of the key science concepts in biology, chemistry and physics. Animal and plant cells; tissues; atomic structure and bonding; chemical and physical properties of substances related to their uses; waves and their application in communications

Practical Scientific Procedures in Practice - Laboratory equipment and techniques, including titration, colorimetry, calorimetry, chromatography, calibration procedures and laboratory safety. Through the practical tasks in the unit, you will develop proficiency in the quantitative analytical techniques of titration and colorimetry, including learning to calculate the concentration of solutions. You will use measurement of temperature to study cooling curves and be introduced to paper and thin-layer chromatography (TLC). You will also have the opportunity to calibrate equipment and will be encouraged to be aware of the safety aspects of given laboratory procedures and techniques. and their application in communications.

Forensic Investigation Procedures in Practice - Students will investigate a simulated crime scene and demonstrate appropriate forensic procedures in collecting and packaging forensic evidence. You will develop scientific analytical-thinking skills through the use of biological, chemical and physical evidence.

Year 2

Science Investigation Skills - This unit covers the stages involved and the skills needed in planning a scientific investigation: how to record, interpret, draw scientific conclusions and evaluate. You will learn how to safely carry out practical investigations, or follow prescribed laboratory procedures. In this unit, you will develop the essential skills underpinning practical scientific investigations. These skills will be delivered through subject themes from previous unit and ranging from enzymes and diffusion to electrical circuits.

Environmental Forensics - The importance of environmental forensics in forensic investigation. The main evidence types covered will be entomology, pollen, diatoms (which are a type of algae) and soil. You will learn the stages of decomposition with the study of taphonomy (the science of decomposition) and appreciate how entomological processes can affect this. You will gain knowledge of the processes in estimating the Time of Death (TOD) using taphonomy and entomological techniques. You will gain skills and knowledge in scene sampling and laboratory methods of analysis

Forensic Genetics - Develop the skills needed to analyse and interpret DNA evidence as part of a criminal investigation. In this unit, you will learn about and carry out a variety of techniques to investigate DNA. You will produce a portfolio of practical outcomes. The use of data from the DNA database, and the issues surrounding this, will also be examined.

What will I be doing in lessons?

The course is based around applying scientific ideas and techniques in real-life forensic contexts. Learning activities will include practical work, independent research, class discussions, presentations, online interactive tutorials, worksheets and note taking.

As well as knowledge and understanding of the science used in a variety of areas you will develop the following skills:

Using apparatus skilfully and safely
Producing and recording valid and reliable measurements and observations
Presenting and analysing data
Research skills
Identifying and evaluating resources
Clarity of oral and written expression
Discussion and presentation skills
Making notes

How will it be assessed?

Assessment is through a balance of externally (210 hours) and internally (300 hours) assessed units over the two years. External assessment is of two types: A written examination for unit 1, and an externally set and marked task-based assessment for unit 3.

And after the course?

The qualification may be complemented with other BTEC Nationals or A Levels to support progression to higher education courses in biochemistry, chemistry, forensic science, environmental science, criminology and law.

The requirements of the qualification will mean learners develop the transferable and higher-order skills that are highly regarded by both higher education and employers. For example, carrying out practical laboratory tasks. planning forensic investigations and reporting findings through group presentations and written reports.

Together with two other level three qualifications, this course will enable you access to a huge range of opportunities in the analytical science sector. The Diploma has been developed to provide the skills that will allow you to observe, understand, assess and suggest solutions to real world problems and the challenges these jobs require. The knowledge and understanding you will learn will provide a strong basis for you to progress in the science sector and to a variety of science and related programmes.

The main purpose of the qualification is to provide learners with the knowledge, understanding and skills in key scientific principles to support progress to higher education or employment in areas of forensic and analytical science, such as job roles in laboratories, school or hospitals. The qualification covers the key topic areas of forensic investigation as well as providing the opportunity to study the areas of criminology and law, environmental science, and wildlife and nature studies.

A significant proportion of career opportunities in this sector are at degree level. When supported by other appropriate qualifications, the level 3 diploma in forensic science will enable progression to higher education to a range of degree and higher applied programmes in the biomedical science and life sciences. A range of degrees in these areas can lead to jobs roles including forensic scientist, police crime scene investigator, police officer, research scientist, teacher.

Alternatively moving straight into paid work after this course is possible in laboratories including hospital, research, school, college, forensic science or quality control facilities.