

St John's Curriculum Overview – Year 12

Subject title	BTEC Level 3 National in Forensic and Criminal Investigation
Setting arrangements	Mixed Prior Attainment
Time allowance each fortnight	11 hours

Introduction

BTEC Nationals are widely recognised by industry and higher education as the signature vocational qualification at Level 3. They provide progression to the workplace either directly or via further study at a higher level.

This is a two-year, full-time study programme for learners who wish to study another area alongside it. This course is equivalent in size to 1.5 A Levels.

The course comprises 6 units of which 4 are mandatory and 2 are optional and selected by the school.

4 out of the six units taken will be assessed internally at school whilst the remain 2 will be assessed by external examiners:

Unit 1 – 2hr written examination marked externally (Year 1)

Unit 2 – Coursework and Presentation, internally marked (Year 1)

Unit 3 – A closed book task set and supervised by an external assessor (Year 1)

Unit 4 – Coursework and report, internally marked (Year 2)

Unit 8 – Coursework, internally marked (Year 2)

Unit 9 – Coursework, internally marked (Year 2)

This course provides a thorough grounding in the practical and theoretical aspects of Forensic Science. It is designed to lead students into related courses in Higher Education, but can also be your stepping stone into a new career.

Within this course students will be able to continue their study of all three Sciences whilst also carrying out and advancing their practical laboratory skills.

Topics, Skills and Assessments covered during the course

	Topics covered	Skills developed	Assessment
Unit 1: Principles and Applications of Science I	Scientists and technicians working in science and science-related organisations must have a good understanding of core science concepts. A strong grasp of these concepts will enable you to use and apply this knowledge and understanding in vocational contexts when studying other units within this course. The topic areas covered in this unit include: 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.	Be able to: <ul style="list-style-type: none"> - Demonstrate knowledge of scientific facts, terms, definitions and scientific formulae. - Analyse, interpret and evaluate scientific information to make judgements and reach conclusions. - Make connections, use and integrate different scientific concepts, procedures, processes or techniques. 	2hr written examination marked externally. This unit will be taught in year 1 of the course and the assessment will take place during the exam period in May/June

Unit 2: Practical Scientific Procedures and Techniques	<p>This unit introduces you to standard 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.</p>	Be able to: <ul style="list-style-type: none"> - Communicate and co-operative within a practical workspace, giving and receiving constructive feedback - Identify problems and apply correct scientific method to identify causes and achieve solutions. - Take responsibility for completing tasks and procedures as well as using judgements within defined parameters. 	<p>Coursework and Presentation, internally marked. This unit will be taught during year 1 of the course. There are 4 learning aims which must be met and these will be internally assessed across the first year.</p>
Unit 3: Science Investigation Skills	<p>Advancement in science and technology has produced great benefits for society. This advancement depends on research and investigative approaches in science and technology. In research, development, analytical and industrial laboratories, laboratory technicians and scientists are employed to safely carry out practical investigations or follow prescribed laboratory procedures. They repeat measurements to obtain consistent, reliable results. They use investigative skills, including planning, recording and interpreting data, analysing and evaluating findings in order to test a hypothesis to inform further research and development. In this unit, you will develop the essential skills underpinning practical scientific investigations.</p>	Be able to: <ul style="list-style-type: none"> - Demonstrate knowledge and understanding of scientific concepts, procedures, processes and techniques and their application in a practical investigative context - Interpret and analyse qualitative and quantitative scientific information to make reasoned judgements and draw conclusions based on evidence in a practical investigative context - Make connections between different scientific concepts, procedures, processes and techniques to make a hypothesis and write a plan for a practical investigation 	<p>A closed book task set and supervised by an external assessor followed by a written assessment. This unit will be taught during year 1 of the course and the external assessment will take place between the end of April and the beginning of May.</p>
Unit 4: Forensic Investigation Procedures in Practice	<p>In this unit, you will develop an understanding of the importance of health and safety, and the need for objectivity and justification in your approach to identifying and analysing forensic evidence. You will investigate a simulated crime scene and demonstrate appropriate forensic procedures in collecting and packaging forensic evidence.</p>	Be able to: <ul style="list-style-type: none"> - Draw conclusions and report on the results of the analysis of forensic evidence - Use analytical techniques to examine forensic evidence collected from a simulated crime scene - Explore procedures used to preserve, collect and record forensic evidence from a simulated crime scene 	<p>Coursework and report, internally marked. This unit will be taught in year 2 of the course. There are 3 learning aim to be met for this unit and each aim A, B, C will be assessed in terms 1/2, 3/4 and 5 respectively.</p>
Unit 8: Physiology of	<p>The human body is a complex mix of organs and organ systems. Knowledge of how they function</p>	Be able to:	<p>Coursework, internally marked. This unit will be taught in year 2 of the course. There are 3 learning aim to be met for this unit and each</p>

Human Body Systems	to maintain human life is an essential part of the study of human physiology. In this unit, you will focus on three body systems: musculoskeletal, lymphatic and digestive.	<ul style="list-style-type: none"> - Explain the impact of disorders of the musculoskeletal system and their associated corrective treatments - Explain the impact of disorders on the physiology of the lymphatic system and the associated corrective treatments - Discuss the physiology of the digestive system and the use of corrective treatments for dietary-related diseases 	aim A, B, C will be assessed in terms 1/2, 3/4 and 5 respectively.
Unit 9: Environmental Forensics	Environmental forensics (also known as forensic ecology) is used in forensic investigation, especially for using entomological evidence to estimate time of death (TOD). Other scientific disciplines such as botany, ecology and geology are now also being recognised as forms of forensic assistance in solving crimes as diverse as wildlife crime to serious crimes such as murders, where they are used to search for potential body disposal sites and linking suspects to the victim or crime scene.	Be able to: <ul style="list-style-type: none"> - Explain how concepts in taphonomy and entomology contribute to forensic investigation - Carry out investigative techniques for taphonomy and entomology that are used to estimate time of death in forensic investigation - Carry out techniques used to examine soil, pollen and diatom evidence in forensic investigation 	Coursework, internally marked. This unit will be taught in year 2 of the course. There are 3 learning aim to be met for this unit and each aim A, B, C will be assessed in terms 1/2, 3/4 and 5 respectively.

Resources Recommended for Revision and where they are available:

Having only recently been released there are not as many resources currently available for this particular course. However, given the similarity of several units (1,2,3 and 8) to those offered on the Applied Science BTEC students may benefit from the following:

BTEC National Applied Science Student Book I

Publisher: Pearson
 Author: Joanne Hartley, Frances Annets, Chris Meunier, Roy Llewellyn, Sue Hocking, Alison Peers, Catherine Parmar
 ISBN: 9781292134093

They also have revision guide:

BTEC National Applied Science Revision Guide

Publisher: Pearson
 Author: David Brentnall, Ann Fullick, Karlee Lees, Chris Meunier, Carol Usher
 ISBN: 9781292150048

...and a workbook:

BTEC National Applied Science Revision Workbook

Publisher: Pearson
 Author: Chris Meunier, Carol Usher, Karlee Lees, Ann Fullick, Cliff Curtis
 ISBN: 9781292150031

Homework

Given the emphasis on coursework based assessments over written examination students should allow for a proportion of time outside of the classroom in order to study, research, revise their learning, and construct their evidence folders. The teachers of this scheme will help to guide them through this ongoing process. Students should not expect to receive weekly 'homework' prompts, however, the expectation of continuous study outside of lessons will be made clear.

Additional support and help for the course

There will be revision sessions run by the course lead in the run up to the external May assessment. Students on this course should seek out Mr Barrington as the course lead should they have any questions, queries or need guidance.

Extra-Curricular:

This course offers students an alternative to A-levels which can guide them onto employment or Higher Education. We would always advise students to enhance their portfolio by ensuring they partake in a range of extra-curricular activities both at school and in the wider community. If students have a particular career in mind and would like advice on the sort of extracurricular activities to support this goal, then please speak to your class teacher or visit the careers office within school.