



CLAIRES COURT
SIXTH FORM

Curriculum Statement

Year 12 - Computing AAQ
2025 – 2026

Your place to *aim high*

Computing AAQ

Pearson Level 3 Alternative Academic Qualification BTEC National in Computing (Extended Certificate). Qualification Number: 610/3963/9

About the course

This qualification gives students opportunities to develop the core knowledge, skills and understanding that underpin computer programming and to develop computational thinking and programming skills that will enable them to solve problems. Students will explore the critical components that safeguard information systems and data and will acquire knowledge and skills to comprehend and apply security and encryption principles and practices to computer networks in various situations. Students will also have the opportunity to examine the underlying principles of human-computer interaction (HCI) and develop a HCI solution to meet the requirements of a given brief. Students will draw synoptically on their programming learning and computational thinking skills to manage the development of a software solution to a problem.

Requirements for Success

Entry Requirements

Students are required to have GCSE Mathematics GCSE English at a minimum of level 5, Mathematics desired level 6.

Who is suitable for this course?

Anyone with an interest in the Digital sector and aiming to progress to higher education as a route to graduate level employment.

Course Structure

The qualification has four mandatory units covering the following topic areas:

- **Programming Fundamentals** – Computing concepts and their application through programming and design methodologies.
In this unit, you will explore logical and structured ways to develop programs using Python and process data to solve specific problems. You will examine the features of effective computer programming including binary maths, recursion, iteration and sorting methods. You will also develop the skills to effectively analyse a problem, break it down into its component parts, and design and evaluate solutions.
- **Computer Network Security and Encryption** – Types and origins of security threats, relevant regulations, methods and tools to detect and prevent threats, and concepts and algorithms of encryption.

- **Human-Computer Interaction** – User experience (UX) and user interface (UI) design principles and their application in creating interfaces; key principles of HCI design, including meeting diverse needs of users. You will have the opportunity to experiment with hardware and software to develop a solution to a set project brief.
- **Practical Programming** – Principles of computer science related to software development and their application in developing and managing a software solution. You will produce a piece of software for a set project brief using Python and standard development tools and methodologies.

These are studied over a two year period spanning Year 12 and 13.

Method of study

Whole class, individual and small group work to prepare presentations, discussions and written essay answers.

Students will use the Python programming language and professional software development environment including Visual Studio Code and GitHub. Through the use of a dedicated lab students will be able to explore computer networks and security. Using specialist software such as Figma students will develop User Experience and User Interface designs. Prototyping boards such as Raspberry Pi will be available for investigating HCI.

Assessment

Unit one: Programming Fundamentals. 33% of course

Externally set and marked written examination, 90 marks

Unit two: Computer Network Security and Encryption. 33% of course

Externally set and marked written examination, 90 marks

Unit three: Human-Computer Interaction. 16% of course

Externally set assignment consisting of 3 tasks taking approximately 20 hours

Optional Unit six: Website Development. 16% of course

Externally set assignment consisting of 2 tasks taking approximately 36 hours

Each unit is graded individually with the final course grade a combination of each unit grade. The grades available are Distinction (D), Merit (M), Pass (P) and Near Pass (N).

Unit one and two exams may be taken from the Summer of Year 12.

Mastery

Students will develop the following knowledge and skills:

- Applied knowledge and understanding of programming design and methodologies and principles of software development in relation to solving specific problems
- Applied knowledge and understanding of how to detect and prevent different types of security threats and design user experiences and user interfaces to meet the diverse needs of users
- Technical skills to:
 - Create a design proposal for an accessible HCI solution to meet the requirements of a brief and develop and evaluate the solution
 - Manage the development of a software solution to meet the requirements of a brief
- Transferable skills such as problem solving, creativity and innovation, written communications and taking personal responsibility.

Students also have the opportunity to develop other transferable skills such as:

- written communication to support the design and creation of digital solutions using technical and non-technical language in user and technical documents.
- critical thinking skills which will be beneficial when students encounter group analytical tasks in higher education.

Taking personal responsibility for their learning on this qualification will help students to manage their work and balance the demands of many degree programmes which require independent study.

Where does it lead?

This course provides a suitable foundation for the study of Computer Science or IT related courses in Higher Education including Apprenticeships. In addition to this the qualification enables learners to develop the transferable skills and higher-order skills that are highly regarded by higher education providers and employers.

For further information please contact:

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Course specifications may be subject to change as directed by the examining board.

<https://qualifications.pearson.com/en/qualifications/btec-nationals/computing-aq.html>