Awarding Body - OCR

Further information available from: Mr Aden & Mr Boadu

Description of Course

This exciting GCSE gives you an excellent opportunity to investigate how computers work, how they’re used and to develop computer programming and problem-solving skills. You’ll also do some fascinating in-depth research, build computers from their core components and practical programming in languages such as Python or Javascript. The course will help you learn about critical thinking, analysis and problem solving.

* Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation.
* Analyse problems in computational terms through practical experience of solving such problems including designing, writing and debugging programs.
* Think creatively, innovatively, analytically, logically and critically.
* Understand the components that make up digital systems, and how they communicate with one another and with other systems.
* Understand the impacts of digital technology to the individual and to wider society.
* Apply mathematical skills relevant to Computer Science.
* Have fun and leave school with a Computing qualification of the highest level, essential for whatever career path you choose.

Entry Requirement

Maths Level 6, English Level 5 – class size limited so only the highest performing applicants will be accepted onto the course.

How You Will Learn

There are two main components to the GCSE

Computer science qualification:

Computer systems

You will become familiar with the impact of Computer Science in a global context through the study of the ethical, legal, cultural and environmental concerns associated with Computer Science.

Content: Systems architecture; memory, storage; wired and wireless networks; network topologies, protocols and layers; system security; system software; ethical, legal, cultural and environmental concerns. There will be practical activities, including the chance to construct computers and explore the world of VR.

1 hour 30 minutes, written paper (50% of the total GCSE).

Computational thinking, algorithms and programming

You will be introduced to algorithms and programming, learning about programming techniques, how to produce robust programs, computational logic, translators and facilities of computing languages and data representation. You will become familiar with computing related mathematics

Content: Algorithms; programming techniques; producing robust programs; computational logic; translators and facilities of languages; data representation.

1 hour 30 minutes, written paper (50% of the total GCSE)

The course is 100% exam based.

In Addition, you will also complete a programming project designed to give the necessary skills to become a software developer.

Programming Project

You must think computationally to solve a series of real-world scenarios and while doing so create a report detailing the creation of your solution, explaining what you did and why you did it.

Content: Programming techniques; analysis; design; development; testing and evaluation and conclusions. Controlled assessment programming task: Design, develop and test a solution to a problem within the OCR-set scenario. Although there are no marks awarded for completion of the project, it is a core component that is submitted to OCR.

After Year 11

The course provides excellent preparation for higher study and employment in the field of Computer Science. The increasing importance of information technologies means there will be a growing demand for professionals who are qualified in this area. Students who have taken a GCSE in Computing and who then progress to study the subject at A-Level or university will have an advantage over their colleagues who are picking up the subject at these levels.

Career Ideas

Computer Games Tester, E-learning Developer Forensic Computer Analyst, It Service Engineer, Software Developer, Web Designer and Web Developer