Sixth Form Courses

Computer Science

Level and Exam Board

A Level Computer Science, OCR

Why choose Computer Science?

Computer Science is a course which has been re-designed to be relevant to the modern and changing world of computing, as well as being relevant to the higher education community.

This is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It’s an intensely creative subject that combines invention and excitement, to allow students to look at the natural world through a digital prism. This is a course which values computational thinking, helping students to develop the skills to solve problems, design systems and understand the power and limits of human and machine intelligence.

Computer Science will be focused on programming, building on GCSE Computing and emphasising the importance of computational thinking as a discipline. This will be the best preparation for students who want to go on to study Computer Science at a higher level and will also provide a good grounding for other subject areas that require computational thinking and analytical skills.

Entry Requirements

GCSE Computer Science grade B or above

OR

GCSE Maths grade A or above
What does the course involve?

Unit 1 – computer Systems
- Components of a computer and their uses
- Types of software and the methodologies used to develop them
- How data is exchanged between different systems
- How data is represented and stored in different structures and the use of different algorithms
- Laws surrounding the use and ethical issues that can arise from the use of computers

Unit 2 – Programming and Algorithms
- What is meant by computational thinking
- How computers are used to solve problems and programs can be written to solve them
- The use of algorithms to describe problems and standard algorithms

Unit 3 – Programming Project
Candidates’ centres select their own user-driven problem of an appropriate size and complexity to solve. This will enable them to demonstrate the skills and knowledge necessary to meet the Assessment Objectives. Students will need to analyse the problem, design a solution, implement the solution and give a thorough evaluation.

How is the course taught?

Lessons will be a mix of theory lessons in preparation for written exams, or practical lessons as part of the coursework elements.

How is the course assessed?

- Unit 1: Two and half hour written exam (40%)
- Unit 2: Two and half hour written exam (40%)
- Unit 3: Coursework project (20%)

What are the opportunities for progression?

This qualification can open up possibilities for studying computer science in higher education. There are now many courses that have computer science and computing at their core, and the computer science industry continues to grow as one of the success stories of this country’s economy.