

A Level Computer Science

Course introduction

Welcome to the world of Computer Science – the only place where “talking to a machine” is considered a skill! At A Level, you’ll get to code like Ada Lovelace, untangle algorithms and even peek under the hood of a computer to see how the CPU really does its magic. You’ll explore web design, dabble in ethical hacking and discover that programming isn’t just typing random letters. As Steve Jobs once said, “Everybody in this country should learn to program a computer... because it teaches you how to think.” And as Mark Zuckerberg might add, “Move fast and break things... preferably in code, not in real life.” So, if you’re ready to turn curiosity into clever solutions, and a keyboard into your new best friend, Computer Science is the subject for you.

OCR Course Content

Component 1 – Exam

- CPU architecture
- Types of software and methods to create software
- How data is exchanged between systems (including networking)
- Data types and data structures
- Data structure algorithms
- Legal, moral, cultural and ethical issues

Component 2 – Exam

- Computational methods (how to solve problem, break them down)
- Coding methods (creating full software and games from scratch)
- Problem solving
- Algorithms for sorts, searching and AI
- Types of software and methods to create software

Component 3 – Coursework

Use your skills to analyse, design, code, test and implement a real-life system of your choice. It could be a game, software, an app. You decide!

Possible careers:

- Software Development & Engineering
- Artificial Intelligence & Machine Learning
- Data Science & Analytics
- Cybersecurity
- Cloud Computing & IT Infrastructure
- Game Design & Interactive Media

The following skills would be recommended for this course:

- Problem solving
- Logical minding
- Maths skills