

Computer Science A-Level

Entry Qualifications

In addition to the standard College entry requirements (see below), this course usually requires students to have achieved grade 6 in GCSE Mathematics and grade 5 in English Language or English Literature.

What will I study?

Computer Science at A Level is a subject which helps students understand the core academic principles of computer science. It requires a systematic and logical approach to problem-solving. The ability to reason logically and to be able to see rules and patterns and how they fit together is a very important attribute for the subject. You will study the following:

Computer Systems: This will cover the characteristics of contemporary processors; input, output and storage devices; software and software development; exchanging data; data types; data structures and algorithms; legal, moral, cultural and ethical issues. You will develop an in depth understanding of IT technologies and practices. These will include hardware, networks, software, the ethical use of computers and how businesses use IT.

Algorithms and Programming (02): This component incorporates and builds on the knowledge and understanding gained in the Computer systems component. You will develop advanced programming skills, learn about computational thinking and how to use algorithms to describe and solve problems.

Practical Project: You will produce a major piece of coursework as a solution to a real-life problem of your own choice. The project will be user driven so you will need to have a real user. You will analyse the problem, design a solution, implement the solution, consider maintenance issues and give a thorough evaluation.

How will I study?

Your lessons will consist of a mixture of theory work and practical work on computers. You will be given work to do outside lessons for both theory and practical work. Your progress will be assessed continuously by your teacher and you will sit tests after each topic in both theory and practical work. These do not count towards your final grade but will be used to give you a clear indication of your achievements and enable us to guide and advise you, as well as to estimate your grade in the final examination. From the advice you are given you will be able to work on any weak areas and to make improvements.

How is the course examined?

This is a linear A-level, this means you will sit two written examinations in May of year 2. They are both equally weighted at 40% each. During year 2 you will complete a programming project which is internally assessed (coursework) and makes up the remaining 20% of the A-level.

Where next?

Most students will continue onto a course in higher education such as Computer Science, Software Engineering, Systems Engineering etc. or will follow a combined degree course with other subjects such as Maths, Economics or Financial Management. Students also have a wide choice of careers they could follow e.g. banking, finance, electronics and computing.

What does the course combine well with?

Computer Science is successfully combined with most subjects. The most usual combinations are with Physics, Electronics, Economics, Maths and other Sciences.

College Entry Requirements

We normally expect applicants to have achieved good GCSE passes in at least six subjects, these must:

- demonstrate the suitability for Advanced Level study
- have been achieved at Grade 4/C as a minimum
- include two at Grade 5/B as a minimum
- include English Language - a minimum grade of 4/C

Mathematics - If not achieved within the scope of the above should normally be achieved at grade 3/D. If mathematics is not achieved at grade 4/C then it will be a requirement to continue to study at the correct level until a grade 4 is achieved. Subjects with a mathematical content will require a higher grade.