

# COMPUTER SCIENCE - A LEVEL

## Course introduction

Computer Science is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It is an intensely creative subject that combines invention and excitement, that can look at the natural world through a digital prism.

## Entrance requirements

Students who wish to study Computer Science must meet the following entry requirements:

- They must hold a GCSE computing or ICT equivalent qualification at grade 4 or above.
- A grade 6 or higher in Mathematics is preferable.  
They also must have acquired a minimum of 5 GCSEs or equivalent at grades 4-9, including English Language and Mathematics.



## How the course is taught

The course is taught through a number of practical and theory sessions utilizing various hardware and software resources. This will build on existing knowledge and skills. Students will be expected to supplement this through independent study and research in college and at home.

## Areas covered by the course

### AS content includes:

- The characteristics of contemporary processors, input, output and storage devices
- Software and software development
- Programming
- Exchanging data
- Data types, data structures and algorithms
- Legal, moral, ethical and cultural issues
- Elements of computational issues
- Problem solving and programming
- Algorithms
- Computer networks

## How the course is assessed

Overall there are three separate units of work;

### Computer systems (01) worth 40% of qualification

This is assessed by an external examination at the end of the course in year 13. Within this unit students will be assessed on data types, data structures, databases exchanging data and encryption methods.

### Algorithms and Programming (02) worth 40% of qualification

This is assessed by an external examination at the end of the course in year 13. Within this unit students will be assessed on abstraction, thinking logically, computational methods and algorithms.

### Programming Project (03) worth 20% of qualification

This is a practical coursework unit. Within this unit students will be assessed on their ability to analyse a problem, design, develop a solution, test and evaluate the product that they have developed.

## Career opportunities

This qualification is suitable for learners intending to pursue any career in which an understanding of technology is needed such as computer games designers, software engineering and for learners who wish to further develop skills at university. The problem solving skills and analysis skills developed within this course are highly transferable skills therefore the qualification is also suitable for any further study as part of a course of general education.

