



**TEACHERS SAY...**

Computer Science is an amazing course both academically and mentally. It teaches you to think outside of the average and restrictive processes and is essential to the modern age as technology is advancing rapidly, opening up a wide range of opportunities.



**Course Overview:**

This modern computing qualification has an emphasis on computational thinking, a kind of reasoning used by both humans and machines. The Computer Science A-Level will give you a thorough grounding in computing, including an understanding of computer systems, the principles of programming and problem-solving. As a budding computer scientist you will learn to theorise, design, develop and apply software and hardware to improve the way we live. Computer Science is not to be confused with ICT.

**Topics covered**

First year of A level	Second year of A level
<p>Component 1 Computer Systems. The internal workings of the (CPU), data exchange, software development, data types and legal and ethical issues. Calculators not allowed.</p>	<p>Component 2 Algorithms and Programming Using computational thinking to solve problems.</p>
<p>Component 3 Programming project Non-exam assessment. Students will be expected to analyse a problem (10 marks), and design (15 marks), develop and test (25 marks), and evaluate and document (20 marks) a program. The program must be written in a suitable programming language. The skills will be started in the first year and completed in the second year.</p>	

**A level Computer Science**

**Examination Board:**



**Teacher contact:**

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**Entry requirements:** Five 9 to 4 (A\* to C) with a minimum 5 in Maths and 6 in Computer Science GCSE. If a student has not taken GCSE Computer Science we would want to see evidence of programming competence.

**Type of Assessment:**

Assessment consists of three components. The first two are assessed through two, 2½ hour exams both worth 40% and a programming project worth 20%. This third component is built around a program that solves a question. The program to solve it must be written in a suitable programming language.

**This course goes well with:**

Maths, Physics and Business studies

**Possible degree options**

According to bestcourse4me.com, the top six degree courses taken by students who have an A-level in Business are:

- Computer science
- Information Systems
- Mathematics
- Business Studies
- Accounting
- Design Studies

## What can I do now to help me prepare for my course?

The content covered in the Computer Science A level coincides with content taught during the first year of most university Computer Science courses, meaning that students are more attractive enrolment prospects at better universities. This makes the course demanding but rewarding. The following websites will help students prepare for the course.

<http://www.teach-ict.com/>

Full set of notes on the OCR course

<http://www.ocr.org.uk/>

OCR website has past papers and other course materials

<https://www.codecademy.com/>

Practise your coding on this interactive website

<https://www.memrise.com/course/1211053/ocr-a-level-computer-science/>

Keywords and concepts covering whole course

<http://theteacher.info/index.php/key-stage-5/ocr-a-level-computer-science-2015>

Set of notes covering OCR course

### Literacy, when you...

...read around the subject, and use several sources of information to inform your work

### Numeracy, when you...

...analyse data and write code

### ICT, when you...

...learn about computer systems and algorithms

## Possible career options:

You can go on to study a wide variety of degree courses at university in Engineering, Physics, Computer Science, Mathematics, Artificial Intelligence and Computer Games Programming. There are also an increased number of Higher Apprenticeships available to students after college in specialist areas.

Computer Science also offers students the opportunity to explore other pathways: music production; digital art; architecture – computer aided design and modelling; smart fabric design for fashion, healthcare and other industries; communication networks; sports analysis; crime investigation; weather and financial forecasting; 3D printing; virtual reality; audio-visual special effects; and robotics, to name but a few.