



A Level Computer Science

AQA Computer Science (A Level)

Why study Computer Science?

Studying Computer Science offers students the opportunity to develop skills that are fundamental to understanding logic and structure. The study of Computer Science encourages precision and accuracy, coupled with imagination and creativity. Students will develop skills in order to solve problems in innovative ways.

Computing and computer technology are part of just about everything that touches our lives. It is hard to imagine any job that doesn't require the ability to use computers, and in fact, there actually are more computing jobs than qualified people to fill them in the United Kingdom. Consequently, computing jobs are among the highest paid and have the highest job satisfaction. The computer job sector is also one of the largest areas of growth in the job market.

What is the course structure?

Paper One	Content
<p>This paper tests a student's ability to program, as well as their theoretical knowledge of Computer Science</p> <ul style="list-style-type: none">◆ On-screen exam: 2 hour 30 minutes◆ 40% of A Level <p>Students answer a series of short questions and write/adapt/extend programs in an electronic answer document provided by the exam board, they also issue preliminary material, a skeleton program and appropriate test data, for use in the exam.</p>	<ul style="list-style-type: none">• Fundamentals of programming• Fundamentals of data structures• Fundamentals of algorithms• Theory of computation• Systematic approach to problem solving
Paper Two	Content
<p>This paper tests a student's ability to answer questions from a wide range of computer science topics.</p> <ul style="list-style-type: none">◆ Written exam: 2 hour 30 minutes◆ 40% of A Level <p>A series of short-answer and extended-answer questions.</p>	<ul style="list-style-type: none">• Fundamentals of data representation• Fundamentals of computer systems• Fundamentals of computer organisation and architecture• Consequences of uses of computing• Fundamentals of communication and networking• Fundamentals of databases• Big Data

Non-exam Assessment	Content
<ul style="list-style-type: none">◆ 75 marks◆ 20% of A Level	The non-exam assessment assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving. You choose your own project and programming language.

What will I learn?

Students develop a rigorous understanding of theoretical programming principles and concepts, and investigate programming logic through a series of software problems sets. Classwork tasks intentionally develop students' accuracy and precision as a fundamental skill. Students are encouraged to persist independently via home learning to develop creative solutions, through regular programming problem sets. These tasks are oriented greatly around logic, and so students develop the ability to deliver accuracy and precision. There are twelve many areas of study that students will work through.

Which activities will I be engaged in during the course?

Students will develop sophisticated practical skills in varied applications of programming. The course has a strong practical nature, where students will develop solutions to demonstrate their understanding of the academic reasoning behind their designs. Students will be exposed to numerous programming languages, and approaches to software development.

How can I prepare for the course?

The following link will provide access directly to the AQA specification for this course:

<http://www.aqa.org.uk/subjects/ict-and-computer-science/as-and-a-level/computer-science-7516-7517>

It is very important that you do not "forget" the knowledge and understanding you currently possess at the end of year 11. You should keep all notes from the GCSE course and continue to expand your programming knowledge during the summer to keep skills fresh in your mind.

Further information: Laura Greene (KS5 Computer Science)