A Level - Computer Science

What is Computer Science?

The growth in demand for people with coding skills is strong, and likely to grow in the future.

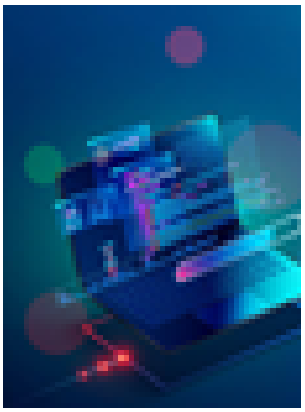
A Level Computer Science develops a broad range of the knowledge, understanding and skills of computing, as a basis for progression into further learning and/or employment.

GCSE Computer Science is an advantage, but not essential.

The course will suit those with strong mathematical and problem-solving skills.

Computer Science is a discipline which requires thinking both in abstract and in concrete terms. It is concerned with problem solving, modelling and analysing problems, designing solutions, and implementing them. Problem solving requires precision, creativity, and careful reasoning.

Why study Computer Science? – it provides you with the knowledge, problem-solving skills and logical thinking capabilities that serve as a competitive advantage in your career. Every industry uses computers, meaning computer scientists can pursue any sector they want.



What will you study?

Paper 1: Programming • Fundamentals of programming • Fundamentals of data structures • Fundamentals of algorithms • Theory of computation

Paper 2: Computer Systems • Fundamentals of data representation• Fundamentals of computer systems • Fundamentals of computer organisation and architecture• Consequences of uses of computing • Fundamentals of communication and networking• Big Data • Fundamentals of functional programming

Programming Project - coursework / Non-exam assessment

Assessment

Paper 1: External Assessment. On-screen exam focused on a pre-learnt skeleton program: 2 hours 30 minutes. 40% of A-level.

Paper 2: External Assessment. Written exam: 2 hours 30 minutes. 40% of A-level.

Non-exam assessment: Practical problem-solving task where students choose their own projects. 20% of A-level

Paper 1

What's assessed
This paper tests a student's ability to program, as well as their theoretical knowledge of computer science

Assessed
- On-screen exam: 2 hours 30 minutes
- 40% of A-level

Questions
Students answer a series of short questions and write/adapt/extend programs in an electronic answer document.

We will issue preliminary material, a skeleton program (available in each of the programming languages) and, where appropriate, test data, for use in the exam.

Paper 2

What's assessed
This paper tests a student's ability to answer questions from subject content

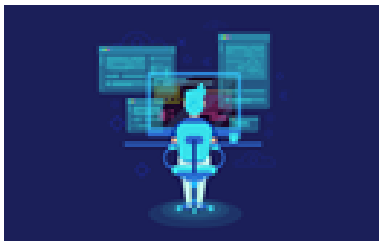
Assessed
- Written exam: 2 hours 30 minutes
- 40% of A-level

Questions
Compulsory short-answer and extended-answer questions.

Non-exam assessment

What's assessed
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 toproblem solving,

Assessed
- 75 marks
- 20% of A-level



Getting ready to start A Level Computer Science

Task1: If you are new to Computer Science, the one skill you will find important is programming. Get up to speed or simply just revise your skills by following this Python tutorial **beginner** ***and/or*** **intermediate.** Review the GCSE course with these bitesize video topics here: **Craig'n Dave**

Task2: **Isaac Computer Science** is an excellent platform of resources for A-level Computer Science students that also provides online student booster, discovery and masterclass events. Sign up @ **Isaac Computer Science** ***using the share code W6LEKN*** where you will find GCSE to A level transition tasks and quizzes waiting for you!

Task3: Complete the following **GCSE to A-level transition pack**

EXTENSION TASK: Look at a **book sample pages** here. Purchase the book here: **AQA AS and A Level Computer Science** Textbook PM Heathcote and RSU Heathcote ISBN: 978-1-910523-07-0