

A-LEVEL COMPUTER SCIENCE



WHY STUDY COMPUTER SCIENCE AT A-LEVEL?

Studying A-Level Computer Science will help students understand the core principles of computer science. We will look at creating real-world systems through the creation of an independent programming project. The course will develop student's technical understanding and their ability to analyse and solve problems using computational thinking.

TOPICS STUDIED

TOPIC 1

Software and Software Development

This involves the function of the operating system, open source vs closed source software and types of programming language.

TOPIC 2

Exchanging Data

The use of databases and characteristics of a network.

TOPIC 3

Data Types & Algorithms

Logic gates, arrays and data representation (Binary, HEX, ASCII, etc.)

TOPIC 4

Legal, Moral, Cultural and Ethical Issues

Computing related legislations including the moral and ethical issues associated with computers

TOPIC 5

Programming

We will develop your knowledge of programming languages such as Java, Python and HTML.

ASSESSMENT STRUCTURE

The course is assessed by two exams and a non exam assessment

ASSESSMENT 1

Computer Systems

- 2 hours and 30 minutes
- 140 marks
- 40% of A-level

ASSESSMENT 2

Algorithms and Programming

- 2 hours and 30 minutes
- 140 marks
- 40% of A-level

ASSESSMENT 3

Programming Project

- Non-exam assessment
- 70 marks
- 20% of A-level

A-LEVEL COMPUTER SCIENCE

ENTRY REQUIREMENTS

Grade 6 in GCSE Computing (where studied)

Grade 6 in GCSE Maths

Merit in iMedia (where studied)

CAREER PATHWAY

After completing the course students will be able to do a degree in Computer Science, Programming or Networking. Students will be suitable for a career in software development, data analytics, network engineering, cyber security and IT consulting.

IS THIS COURSE FOR ME?

Computer Science will be relevant to the modern and changing world of computing. Computer Science is a practical subject where students can apply the principles learned in the classroom to real world systems. It will help to develop your skills in solving problems, designing systems and understanding the power and limits of human and machine intelligence. The course will develop your programming skills and during the project you will be able to apply your knowledge to solve a real-world problem.

NEED MORE INFORMATION?

Please contact Mr Duffy, Subject Lead for Computing (mduffy@lighthall.co.uk)

READING LIST

- A-Level Computer Science for OCR Teaching Programming Author: Laura Dixon
- AS/A-Level Computer Science for OCR Student Book Author: Alistair Surrall and Adam Hamfleet
- OCR AS and A-Level Computer Science (PG Online Ltd)

