Overview

The Computer Science course offers students a unique opportunity to apply theoretical principles to practical, real-world systems. This dynamic field fosters creativity and innovation, allowing learners to explore the natural world through a digital lens. Emphasising computational thinking, the curriculum equips students with essential skills for problem-solving, system design, and an understanding of the capabilities and limitations of both human and machine intelligence.

Assessment comprises three components: Paper 1, an on-screen exam evaluating programming skills and theoretical knowledge; Paper 2, a written exam focused on subject content; and a Non-Exam Assessment, a practical programming project that demonstrates the student's ability to analyse a problem, design a solution, and implement it.

Structure

Year 1

- Fundamentals of programming
- Fundamentals of data structures
- Fundamentals of algorithms
- Theory of computation
- Fundamentals of data representation
- Fundamentals of computer systems

Year 2

- Fundamentals of computer organisation and architecture
- Consequences of uses of computing
- Fundamentals of communication and networking
- Fundamentals of databases
- Big Data
- Fundamentals of functional programming
- Systematic approach to problem solving
- Non-exam assessment – the computing practical project

Assessment

Paper 1
On-screen exam: 2 hours 30 minutes, 40% of A-level.
Tests a student's ability to program, as well as their theoretical knowledge.

Paper 2
Written exam: 2 hours 30 minutes, 40% of A-level.
This paper tests a student's ability to answer questions from subject content.

Non-exam assessment:
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.