Computer Science

Examination Board: OCR
Qualification: A level
Teacher Contact: Mr Eidman

Entry Requirements: Candidates beginning this course do not have to have studied Computer Science before, although a good level of mathematical problem solving ability and resilience is essential, as is an interest in programming. If the student has studied Computer Science at GCSE they will need to have achieved a grade 6. Candidates who have not studied the GCSE will require at least grade 5 in English and Mathematics.

We offer the Advanced GCE in Computer Science which consists of three units of study over two years. It is a mixture of theory and practical programming work.

Aims of the course
Encouraging students to develop:
— an understanding of, and the ability to apply, the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms and data representation
— the ability to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so
— the capacity for thinking creatively, innovatively, analytically, logically and critically
— the capacity to see relationships between different aspects of computer science
— mathematical skills related to:
  • Boolean algebra
  • comparison and complexity of algorithms
  • number representations and bases
— the ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology.

How will I be assessed?
Paper 1: Computer systems
40% of A Level, 2 ½-hour written paper
Paper 2: Algorithms and Programming
40% of A Level, 2 ½-hour written paper
Programming project
20% of A level, Practical programming problems

Where can it lead?
A level Computer Science provides a suitable foundation for the study of Computer Science, Digital Technologies, Digital Forensics or related courses in higher education. Opportunities for careers in cyber security and encryption are becoming more and more popular. Some practical-style courses are becoming more available after A levels.