Computer Science

Exam Board: OCR

Qualification: A Level Computer Science (H446)

Why study this subject?

Computer Science, above all else, is relevant to the modern and changing world. It is an intensely creative subject that combines invention and excitement in creating real-world solutions to real-world problems.

The course values computational thinking, helping learners to develop the skills to solve problems, design systems and understand the power and limits of human and machine intelligence. Learners will develop an ability to analyse, critically evaluate and make decisions. The project approach is a vital component of 'post-school' life and is an introduction to Further Education, Higher Education and the workplace. Each learner can tailor their project to fit their individual needs, choices and aspirations.

The key features of this specification encourage:

- emphasis on problem solving using computers
- emphasis on computer programming and algorithms
- emphasis on the mathematical skills used to express computational laws and processes, e.g. Boolean algebra/logic
- less emphasis on ICT

What teaching and learning methods will be used?

A variety of teaching and learning methods will be employed including online resources, study groups and practical programming.
There is an expectation of independent work, onsite or at home, particularly in production of the non-examined project.

How will the course be assessed?

The A Level in Computer Science is assessed in June. It consists of two examined components (01 and 02), externally assessed by OCR, and one internally assessed and moderated non exam assessment component (03 or 04).

Both examinations are of 2 hours and 30 minutes duration, each with a 40% weighting. The non-exam assessment component is weighted at 20%.

COURSE CONTENT

Component 01
This contains most of the content of the specification and is assessed in a written paper recalling knowledge and understanding.

Component 02
This relates principally to problem solving skills needed by learners to apply the knowledge and understanding.

Programming Component (03 or 04)
This is a practical portfolio-based assessment with a task that is chosen by the teacher or learner and is produced in an appropriate programming language.

Skills across the course:
Mathematical skills are embedded throughout the content of the three components. They will be assessed in the written papers and through the non-examined assessment where appropriate. The quality of extended responses are assessed.

Future courses and possible careers

This qualification is suitable for students intending to pursue any career in which an understanding of technology is needed. It is also suitable for any further study as part of a course of general education.

It will provide learners with a range of transferable skills which will facilitate personal growth and foster cross curriculum links in areas such as maths, science and design and technology. Computer Science is a very creative subject and skills such as problem solving and analytical thinking will all be refined and explored.

For further information or advice please contact Ms Angland. ict.contact@williamhoward.cumbria.sch.uk