Course content

The course aims to give you a real, in-depth understanding of how computer technology works. You will no doubt be familiar with the use of computers and other related technology from your ICT lessons, other subjects and elsewhere. However, this course will give you an insight into what goes on ‘behind the scenes’, including computer programming, which many students find absorbing. You will spend time looking at problems and trying to solve them using different computer programming languages and techniques.

Unit 1: computer systems

This unit introduces students to the central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. It also looks at ethical, legal, cultural and environmental concerns associated with computer science.

Unit 2: computational thinking, algorithms and programming

In this unit, Students apply knowledge and understanding gained in component 01. They develop skills and understanding in computational thinking: algorithms, programming techniques, producing robust programs, computational logic and translators.

Practical programming

Students are to be given the opportunity to undertake a programming task(s) during their course of study which allows them to develop their skills to design, write, test and refine programs using a high-level programming language.

Students will be assessed on these skills during the written examinations, in particular component 02

Progression

This course provides excellent preparation for any student wishing to study computing/computer science at A Level (offered at Shelley College), or under-graduate degree level study and employment in the field of computer science. The increasing importance of information technologies means there will be a growing demand for professionals who are qualified in this area. Students who have taken a GCSE in Computing and who then progress to study the subject at A Level or university will have an advantage over their colleagues who are picking up the subject at these levels.