COMPUTER SCIENCE
OCR COMPUTER SCIENCE A LEVEL - H446

CAREER POSSIBILITIES

Studying Computer Science opens up possibilities in a wide variety of subject areas and industry sectors. Computer Science is seen as either essential or facilitating in a range of Higher Education subjects such as; Biological, Chemical, Medical and Physical Sciences, Engineering in all its forms, Social Sciences, Maths Economics and Medicine. In addition, Computer Science is a direct route to Software Development, Web Development and Network Engineering among other career paths.

THE PROGRAMME

Computer Scientists are a necessary part of every type of industry and, especially in the digital age, we have the prospect to work in a rewarding environment with many opportunities internationally. Studying Computer Science at A Level will involve learning about the hardware and software aspects of computer systems:

Computer Systems: You will learn about the inner workings of the computer such as the CPU, the exchange of data, software development, data types and legal and ethical issues concerning computers.

Algorithms and Programming: You will develop your understanding of 'computational thinking' and apply your knowledge to solving a wide variety of problems. You will learn to use algorithms to describe problems and analyse those problems to their component parts.

In the second year of the A Level, you will also complete a Programming Project. In this non-exam unit, you will analyse, design, develop, test, evaluate and document a program that solves a computationally solvable problem. You will use 'agile' development techniques to ensure that your project is completed successfully. The teaching styles are lectures, presentations, practical lessons, coding/programming sessions, individual/paired/group reports, guided research and self-study. For the AS there are two exams over one year and the full A Level (two years) has two exams at 80% and one coursework project at 20%.

WHY STUDY THIS SUBJECT?

While it is true that we will all use computers in our professional and everyday life, not all of us need to be programmers. Computer Science is not simply about programming computers. Studying Computer Science allows us a deeper understanding of the way that computers work and gives us a fuller understanding of the nature of problems and the way that they can be solved successfully. In describing a problem fully, decomposing it to its component parts, we can ensure that a computer, whether electronic or human, can follow the instructions given and ensure that the problem is solved entirely. The computational methods and the thinking involved are applicable to many of the world's greatest problems. This is why the subject is held in such high regard by engineers, mathematicians, physicists, software developers and the medical profession.

In addition to the direct benefits of understanding computer systems, it is important to note that you might well, in the future, be dealing with computer scientists who will be solving the problems that you face. In this context, it is beneficial to be able to communicate using a common language understood by everyone involved. The transferable skills gained are wide-ranging and useful in many disciplines beyond the computer suite.