COMPUTER SCIENCE

SIXTH FORM

COURSE TITLE

A Level Computer Science

Exam Board: OCR

AIMS OF THE COURSE

To enable you to engage in a practical course of study, applying academic principles to real world computer systems in an inventive and creative format. The course aims to help you develop an understanding and ability to apply the fundamental principles and concepts of computer science, including: abstraction, decomposition, logic, algorithms and data representation. You will develop the ability to analyse problems in computational terms through practical experience of solving such problems including writing programs to achieve these goals. The course emphasises the importance of problem-solving using computers, computer programming and algorithms, mathematical skills used to express computational laws and processes such as Boolean algebra/logic and a comparison of the complexity of algorithms.

WHAT WILL YOU STUDY?

Over the two-year course you will study the following topics:

- The characteristics of contemporary processors, input, output and storage devices.
- Software and software development.
- Exchanging data.
- Data types, data structures and algorithms.
- Legal, moral, cultural and ethical issues.
- Elements of computational thinking.
- Problem solving and programming.
- Algorithms to solve problems and standard algorithms.

HOW WILL YOU BE ASSESSED?

Unit 1: Computer Systems – 2 hour 30 minutes written examination out of 140 marks (40% of the course).

Unit 2: Algorithms & Programming – 2 hour 30 minutes written examination out of 140 marks (40% of the course).

Unit 3: Programming Project – Non Exam Assessment (NEA) coursework out of 70 marks (20% of the course).

WHAT WIDER SKILLS WILL YOU DEVELOP?

- Different thinking skills; creative, innovative, analytical, logical and critical.
- The capacity to see relationships between different aspects of computer science.
- Mathematical skills.

WHAT ARE THE FUTURE OPTIONS FROM THE COURSE?

The subject will give you future options to work within careers and job roles such as an Aeronautical Engineer, Electronics Engineer, Software Engineer, Computer Programmer, Computer Analyst or Games Designer.