

A LEVEL COMPUTER SCIENCE

WHAT IS COMPUTER SCIENCE?

If you want to take an A Level which will give you relevant, transferable skills, is challenging, rewarding and fun, then Computer Science could be the one for you. When you study Computer Science at A Level you will learn a wide range of skills such as problem solving, logical reasoning and abstract thinking as well as being able to develop your innovative and creative side. You will learn an industry recognised programming language and be given the opportunity to develop and progress your programming skills throughout the two year course.



WHY SHOULD I STUDY COMPUTER SCIENCE?

Studying Computer Science will give you:

- A wonderful sense of satisfaction when you solve that complex problem and an even greater sense of satisfaction when you can create the code to implement that solution
- An overview of a wide range of industry standard programming languages
- In-depth practical programming experience in your chosen language
- A sound understanding of the Computer Science fundamentals
- Highly developed problem solving skills

USEFUL SKILLS & INTERESTS

You should have an innate interest in all things technical as well as a sound logical mind. You need the determination not to give up until your source code is working.

COURSE STRUCTURE & CONTENT

Unit	What you will learn
Computer Systems (40%)	Characteristics of processors Software development lifecycle Networks Data types (including binary maths), data structures (queues, stacks, trees etc.) and algorithms Legal, moral and ethical issues of computers, and more
Algorithms & Programming (40%)	Computational thinking (how to approach a problem in a logical way) Problem solving and programming Creating algorithms (using pseudocode) Standard algorithms (e.g. sort and search algorithms)
Programming Project (20%)	Analysis of the problem; Design of the solution; Development of the solution; Evaluation of the solution

HOW WILL I BE ASSESSED?

Two of the three units over this two year course are examined via a 2½ hour exam each. Both exams are written exams, unit one covers the theoretical elements of Computer Science and another covers algorithmic thinking and problem solving. Although the exam for unit two is written, it is taught with the aid of practical programming exercises. The third unit gives you a chance to showcase your programming skills via a practical programming project which is a non-exam assessment.

COURSE COMMITMENT

This is a two year course. You will be expected to undertake self-directed study to ensure successful completion of the course. This can be completed at college within your timetabled private study periods or at home. You must also be prepared to put in extra study time in order to complete the project work.

ENTRANCE REQUIREMENTS

For entry on to this course you will need to meet the college standard entry requirements for Advanced Level study of 5 GCSE passes (grades 4 - 9) including English Language at a minimum of a grade 5 as complex technological concepts need to be accurately described in written work and Maths at least a grade 6 as numeracy and logical problem-solving skills are a large part of the programming component.

PROGRESSION ROUTES

Computer Science students have the opportunity to go on to university, and around half follow computer- related courses, such as computer science, engineering, systems analysis, games design / programming, software engineering, informatics etc. or joint courses such as business management with computing or IT. Some universities now require an A Level in Computer Science for some of their courses.

In today's workplace, those with knowledge and skills in computing have the opportunity to pursue new and exciting careers and to be instrumental in the conception of computer systems that increasingly shape work and leisure activities.

Some of the students who studied this course at Prior Pursglove College progressed on to:

- Hull University – **Computer Science**
- Sheffield University – **Computer Science with Maths**
- Teesside University – **Computer Science**

FURTHER INFORMATION

If you require further information please contact Paul Cullis.

Please note that the information in this leaflet is correct at the time of publication, but circumstances may arise which cause us to revise our provision.
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