Springwood SIXTH FORM

COMPUTER SCIENCE

"Learning to code is useful no matter what your career ambitions are."

Entry Requirements

A minimum of grade 4 in Maths and an English plus at least 3 other GCSEs at grade 5

Subject Specific Requirements

Grade 5 in Computer Science or merit in BTEC LEVEL 2 ICT (if have programming experience). Grade 5 in Maths

About the Course

This specification has been designed for students who wish to go on to higher education courses or employment where knowledge of Computer Science would be beneficial. The course is not about learning to use tools or training in a programming language instead the emphasis is on computational thinking, a kind of reasoning used by both humans and machines.

It is a practical, creative subject that combines invention and excitement. It values computational thinking helping learners to develop skills to problem solve, design systems and understand the power and limitations of human and machine intelligence.
Learners will develop an ability to analyse, critically evaluate and make decisions.

"At its heart lies the notion of computational thinking: a mode of thought that goes well beyond software and hardware, and that provides a framework within which to reason about systems and problems." (CAS-Computer Science a Curriculum for Schools)

Assessment

In the new A level specification the emphasis is on programming, algorithms, problem solving, thinking skills and mathematics. There are three units to the qualification.

Unit 1 – Computer Systems   O1
Students gain an appreciation of computing fundamentals including hardware, software as well as the presentation, structure and management of data. They look at the systems life cycle, characteristics of information systems and the implications of computer use. Legal, moral and ethical issues.
Assessed by examination; 40% of the marks

Unit 2 – Algorithms and Programming   O2
Students gain an appreciation of computational thinking, programming and problem solving, pattern recognition, abstraction and decomposition, algorithm design and efficiency.
Assessed by examination; 40% of the marks

Unit 3 – Programming Project   O3
Students select their own problem of a suitable size and complexity. Students analyse the problem, implement the solution and provide a thorough evaluation.
Assessed by coursework; 20% of the marks

Future Applications

One can study Computer Science and go on to a career in:

medicine, law, business, politics or any type of science. Alternatively, there are many career paths within the discipline Including :

3D animator, games developer, graphic designer, network administrator, programmer, software developer, system analyst , hardware developer, database administrator and web designer.

Alumni

After gaining A level grade A, Tom received a First Class BSc degree in Computer Science With A Year In Industry from University of East Anglia in 2012 . He is a now a PhD student in the School of Informatics and a member of CSTR (The Centre for Speech Technology Research).