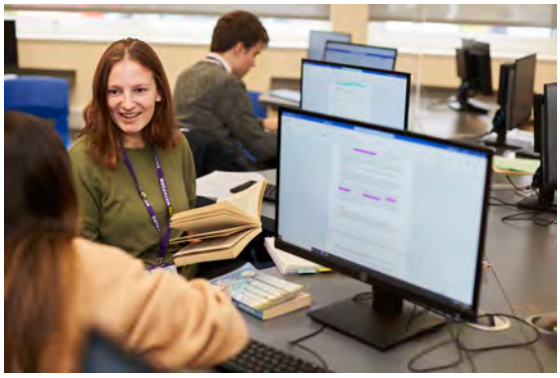
Guilsborough Academy Sixth Form

KS5 CURRICULUM

Course Title: **A Level Computer Science**

Examination Board: OCR



Entry Requirements: Please see Entry Requirements in the Application Form.

Assessment: Computer Science is assessed by two 2 hour 30 Minutes examinations at the end of year 2 (80%). As well as an extended programming project(20%). The exams include a range of short answer question as well as elements of algorithmic thinking and code.

Is This Course Right For Me?

Computer Science is a practical subject where you learn to use computers to solve real world problems through programming and logical thinking.

If you are interested in logic puzzles and like to problem solve this could be the course for you.

If you are interested in how computers work and want to know the technical details of how they work, this could be for you.

Example of university courses and grades required

- **Aston University**: BEng (Hons) Electronic Engineering and Computer Science: BBB
- **University of Manchester**: BSc Computer Science: A*AA
- **Oxford University**: BA Computer Science: A*AA
- **Coventry University:**BSc (Hons) Cloud Communications and Networking **:** BBB

Unit Contents:

PAPER 1 (2 hrs 30 Minutes, 40%)

- 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

PAPER 2 (2 hrs 30 Minutes, 40%)
Elements of computational thinking

- Problem solving and programming
- Algorithms to solve problems and standard algorithms

Programming Project (20%)
A computing problem will be chosen by the student who will then have to create a program to solve the problem, with all the associated documentation of how the problem was solved.

This will include

- Analysis of the problem
- Design of the solution
- Developing the solution
- Evaluation

The course is designed to allow you to develop an in depth understanding of computational and algorithmic thinking. As well as understanding the theory that underpins how modern computers work.
"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).

Progression:

Because Computer Science is such a broad field of study, a Computing qualification supports lots of different higher education choices, in addition to supporting many career areas.

Some people may enter into careers in web design, or software engineering. Others may prefer to go into the networking or hardware field. Home automation is a growth industry and many computing skills are transferable to this.

However the key skills learnt in computer science are analytical thinking and problem solving, something that can be used anywhere.

Further Information Contact:

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