



Overview of the course

This course covers the theoretical and practical aspects of Computer science and computational methods. If you are interested in using computers to analyse and solve problems this is the course for you. It will teach you the skills required to work in an IT focused business or industry. You will use problem solving skills and develop software development skills of analysis, design and evaluation.

What are the entry requirements?

The entry requirement for this course is at least a 6 in computer science and Mathematics and a 5 in English, at GCSE level. Students who have got an 7 and above in Mathematics, but no computing qualifications, are encouraged to apply.

How is the course assessed?

To complete the A Level year of the course you will study three units. These will be assessed by written examinations and large coursework submission.

What are the career opportunities?

You may progress onto Computing/IT related higher education courses or employment where knowledge of IT and programming skills are required. Some examples:

Application analyst , Applications developer, CAD technician, Cyber security analyst, Data analyst, Database administrator, Forensic computer analyst, Game designer, Games developer, Information systems manager, IT consultant, Machine learning engineer, Multimedia programmer, SEO (search engine optimisation) specialist, Software engineer, Systems analyst, UX (User eXperience) designer, Web designer, Web developer

Current and Future in-demand jobs

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/391911/15.01.05._UKCES_Career_Brochure_V13_reduced.pdf

<https://www.zdnet.com/article/the-10-it-jobs-that-will-be-most-in-demand-in-2020/>

<https://www.weforum.org/agenda/2016/01/8-jobs-every-company-will-be-hiring-for-by-2020/>

<https://www.topuniversities.com/student-info/careers-advice/what-will-hottest-jobs-be-2020>

The content of this A Level in Computer Science is divided into three components:

- Computer systems component (01) contains the majority of the content of the specification and is assessed in a written paper recalling knowledge and understanding.
- Algorithms and programming component (02) relates principally to problem solving skills needed by learners to apply the knowledge and understanding encountered in Component 01.
- Programming project component (03) is a practical portfolio based assessment with a task that is chosen by the teacher and is produced in an appropriate programming language of the learner's or teacher's choice.

Content Overview	Assessment Overview	
<ul style="list-style-type: none"> • The characteristics of contemporary processors, input, output and storage processors • 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 <p><i>The learner will choose a computing problem to work through according to the guidance in the specification.</i></p> <ul style="list-style-type: none"> • Analysis of the problem • Design of the solution • Developing the solution • Evaluation 	<p>Computer systems (01) 140 marks 2 hours and 30 Minutes written paper</p>	<p>40% of total A level</p>
	<p>Algorithms and programming (02*) 140 marks 2 hours and 30 minutes written paper</p>	<p>40% of total A level</p>
	<p>Programming project (03* or 04**) 70 marks Non-exam</p>	<p>20% of total A level</p>

* Indicates synoptic assessment

** Learners who are re-taking the qualification may carry forward their mark for the non exam assessment component (04).