COMPUTER SCIENCE (OCR)
Level of Study: A-Level

Computer Science is a fast paced, stimulating field that incorporates many different disciplines including mathematics, programming, engineering and linguistics.

A-Level Computer Science will open up your mind to the world of computational thinking and hone your problem solving skills. The course has an exciting practical element where students will learn the foundations of HTML, CSS and Javascript as well as designing and then programming their own bespoke application in JAVA (or a language of their choice). They will also experience low level programming using the Little Man Computer simulator.

The specification covers the inner workings of computers and networks and how results of processing can aid a range of industries. You will learn how to decompose problems to make them more manageable as well as the problem solving techniques of abstraction, heuristics and pipelining. The course will answer questions you may already have about technology and present a multitude of new ones.

Technology is a key building block of the modern world and will continue to revolutionise society. If you want to be a part of future innovations that shape the way we live, this is the course for you.

Due to the gender imbalance in the technology industry at present we strongly encourage females to consider Computer Science as an option. The imbalance is not because companies do not want to hire females but rather the lack of females currently applying. With technology shaping the way in which the world works it is more important than ever that females are involved in the decision making and development of new innovations.

Description of Course

Qualification	Module Title	Marks	Weighting
A-Level (H446)	01: Computer Systems (exam 2h 30m)	140	40%
	02: Algorithms and Programming (exam 2h 30m)	140	40%
	03: Programming Project (coursework)	70	20%

The aims of the course are to give students the opportunity to develop:

● an understanding of and ability to apply the fundamental principles and concepts of computer science including; abstraction, decomposition, logic, algorithms and data representation

● the ability to analyse problems in computational terms – including writing programs

● the capacity for thinking creatively, innovatively, analytically, logically and critically

● the capacity to see relationships between different aspects of computer science

● the ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology.

*correct at time of publication October 2020

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Skills Required

Computer Science is an ideal subject for inquisitive students with a strong interest in technology in particular. You will need to be able to work independently as well as part of a group and have the patience to solve complex logical problems.

Entry Qualifications

The course has a number of complex topics and it is expected that students have achieved at least GCSE grade **6** in Computer Science or ICT.

Additionally students will need at least grade **6** in Mathematics (in order to deal with the logical aspect of programming) and a grade **5** in English

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Educational Progression and Career Opportunities

Although Computer Science is an ideal introduction to those wishing to study the subject at degree level, the course will allow candidates to develop a range of transferable skills such as the ability to problem solve, think creatively, innovatively, analytically and logically as well as program bespoke applications. These are the skills that drive innovation across areas including the sciences, engineering, business, entertainment and education. No matter what field you want to enter, having a background in Computer Science will give you that competitive edge and the potential to make a positive difference within your chosen career.