

# Computer Science/Information Technology in a Global Society

## A level – Computer Science

### What will I study and learn?

The Computer Science specification is designed to provide the knowledge and skills suitable for participation in a rapidly evolving computer-dependent society. You will gain an understanding and ability to apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation. You will also learn the ability to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so.

You will cover contemporary systems' architecture; software and software development; exchanging data; data types; representation and structures; and legal, moral and ethical issues.

Alongside this, you will be taught how to program using an object-orientated programming language. You will learn the theory behind programming, looking at computational thinking, problem-solving and algorithms.

The coursework brings together all the programming skills learnt, developing a problem to a solution. The system analysis and design aspects of this coursework, together with the necessary time-management, are highly transferable skills that are a real benefit to studying A level Computer Science.

### What skills should I have and what will be developed?

You will need to have a strong mathematical background with the ability to solve and decompose problems. You should have evidence of programming ability, either through successful completion of a GCSE in Computer Science or a programming portfolio. You will develop your programming ability further to include object-orientated programming skills and the confidence to independently learn new programming languages. Your ability to work creatively to identify and solve problems will grow throughout the course.

### How will I be assessed?

#### Paper 1

##### Computer Systems (40%)

This written paper assesses knowledge and understanding of the course.

#### Paper 2

##### Algorithms and Programming (40%)

This written paper assesses the problem-solving skills required to apply knowledge from paper 1 to different scenarios.

#### Programming Project (20%)

This non-examined assessment allows you the freedom to identify a problem and create a substantial program to solve it. The development story of that program is written up as a report which is then marked. The coursework is completed in the first year of the course.

## A level/IB

Computing qualifications open up a wide range of opportunities in engineering, science, technical and system design careers, software development, ICT and commerce, the media, and the finance and management sectors.

### Entry requirements

You must have studied Computer Science (if offered at your school) and Mathematics at GCSE and should achieve a minimum of grade 7 in both for A level; grade 6 is the minimum grade for the IB standard level course. If Computer Science was not offered, it is essential that you show evidence of programming knowledge. A GCSE in English at a grade 6 is also desirable.

## IB – Information Technology in a Global Society (ITGS)

### What will I study and learn?

The standard level course will be split over three strands: strand 1 covers social and ethical significance; strand 2 will look at how IT is applied in the real world, covering a number of scenarios and situations where IT can be used, such as education, business, the health industry and military; and strand 3 looks at the IT systems we use in depth, aiming to give students an understanding of how they are developed and maintained.

### What skills should I have and what will be developed?

The course looks to develop your skills by integrating all three strands; each strand must be viewed through the 'lens' of all three parts of the ITGS Triangle. The ITGS looks to develop a much wider skill set than just the topics covered in the course, encouraging students to become inquirers, knowledgeable, principled, open-minded, balanced and reflective. These attributes will be built upon so that you can work collaboratively, not only within our subject but with other subjects, setting yourself up for further studies and enabling you to become a responsible member of local, national and global communities.

### How will I be assessed?

You will be assessed through two written exam papers and an IT systems project:

Paper 1:40%

- 1 hour 30 minutes
- You will answer two of four structured questions on the core topics; these topics are presented as scenarios

Paper 2: 30%

- 1 hour 15 minutes
- You will be given an unseen news article and will need to produce a response based on four criterion: the presentation of the issue, the IT background of the issue, the impacts of the issue, and a solution to problems arising from the issue

• 30%.

Project:30%

- Create a real-world IT solution to a problem proposed by a client

### Want to know more?

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Exam Board:  
[www.ocr.org.uk](http://www.ocr.org.uk)  
[www.ibo.org](http://www.ibo.org)

“The small class sizes in Computer Science mean that there is a great amount of contact time with teachers – something that is invaluable to me and my learning.”

Tom Woodley, OB 2020  
Courses: Computer Science, Physics,  
Mathematics and Further Mathematics

