

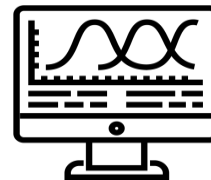


Wigston College

# Computer Science

## A Level 2022 – 2023

### Advanced Level – Course Code 7517



#### Examination Board

AQA

#### Entry Requirements:

A GCSE Grade 5 in Computer Science. If this subject has not been studied at GCSE level, a GCSE in Maths Grade 6 is required

#### What will I be studying?

The course covers the following topics: programming in Vb.net (both console and form mode), data structures, algorithms (flowcharts and pseudocode), theory of computation, data representation, fundamentals of computer systems, fundamentals of computer organisation and architecture, consequences of uses of computing, fundamentals of communication and networking, databases, Big Data and fundamentals of functional programming. You will be taught a systematic approach to problem solving. There is a Non-exam assessment in the second year of the course - the computing practical project.

A more detailed breakdown of the specification can be found by visiting [www.aqa.org.uk](http://www.aqa.org.uk) and searching for Advanced level Computer Science (code 7517)

#### How will I be studying?

This exciting course 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 emphasis is on computational and abstract thinking, general problem solving, algorithmic reasoning, scientific and engineering based thinking and the course lays a good foundation for understanding ever increasing future challenges that face computer scientists.

The course fully equips you with valuable skills that apply to other areas of study and most areas of work such as meeting deadlines, project management and problem solving in a computing context. The work builds on the skills learnt at GCSE level. You will extend your programming skills by learning to program in VB.Net and you will learn the basics about the complex area of Object Oriented Programming. This course aims to broaden your understanding of all areas connected with computer science.

The study of computer science also covers the organisation of computer systems and will provide you with an in-depth understanding of the principles and concepts underpinning computers and communications. Many aspects involve mathematical thinking and reasoning and throughout the course there will be many opportunities to develop skills in analysis, logic and computational thinking. Lessons are taught in computer rooms and will often start with a theory element which is then explored in a practical setting. Many lessons will not involve the use of computers.

## How will I be assessed?

The final assessment takes place in the second year of the course. The course is taught as a two year Advanced level course. However, it is possible to accommodate a small number of students who wish to complete the AS year only. These students will study similar content but will undergo a different scheme of assessment.(details of this can be obtained via [www.aqa.org.uk](http://www.aqa.org.uk))

### **Advanced level assessment:**

#### **A Paper 1** (40% of the total A level marks)

On Screen examination 2 hour 30 minutes

Some questions are based on preliminary materials (vb.net program).

#### **A Paper 2** (40% of the total A level marks)

Written examination 2 hour 30 minutes

#### **Non exam assessment** (20% of the total A level marks)

Practical Coursework chosen by you.

## Where Next?

The course provides an excellent foundation for students wishing to continue their studies at university (in Computer Science and Computer Science related courses). It also provides an excellent background to those wishing to follow a course in subjects that have significant technical content (such as courses that focus on aspects of engineering). Many former students have successfully continued their studies beyond A level, have graduated and are working in the Computer/IT industry. Students have also been successful in securing apprenticeships with a variety of different companies/organisations.

The course is highly technical and mathematical. A successful advanced level qualification in Computer Science is proof of the student's ability to understand and absorb highly complex, often abstract information. In addition, the major project completed in the second year, can also provide important show-case evidence of students applying complex technical skills to producing solutions to real-life problems. There is much emphasis on meeting deadlines, project management and problem solving in a computing context.