Wigston College

Computer Science
A Level 2025 - 2027

Examination Board

OCR

Entry Requirements:

A GCSE Grade 6 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?

This course covers the following topics: programming in Python (using PyCharm, OOP and range of pip installed features): Paper one covers 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 two covers elements of computational thinking; Problem solving and programming; Algorithms to solve problems and standard algorithms. There is a Non-exam assessment which accounts for 20% of your overall marks and generally starts in the summer term of year 12 - the Programming Project. The learner will choose a computing problem to work through according to the guidance in the specification which is based on analysis of the problem, design of the solution, developing the solution and evaluation

A more detailed breakdown of the specification can be found by visiting www.ocr.org.uk and searching for Advanced level Computer Science (code H046)

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; Design, program and evaluate computer system that solve problems, make reasoned judgements about these and presenting conclusion; and understanding of the principles and concepts of computer science including analysing problems in computational, scientific and engineering based thinking which 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 course builds on the skills learnt at GCSE level. You will extend your programming skills by learning to program in Python and C# using more advanced techniques which include 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 developing your programming skills and developing Computer Science concepts which is

then explored in a practical setting. Some lessons will not involve the use of computers to embed the learning.

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.

Advanced level assessment:
A Paper 1 (40% of the total A level marks) On Screen examination 2 hour 30 minutes
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.

Core Mathematics:

As this subject contains elements of mathematical content within its specification and assessments, we strongly advise that you should also elect to take the Core Mathematics course to support your studies (if not already taking A Level Mathematics). The Core Mathematics course is a one-year course specifically designed for this purpose. You would still need to pick three main Level 3 subjects plus Core Mathematics. Please see the Core Mathematics information sheet for more details.

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 an opportunity to 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.