

POST 16 SUBJECT OVERVIEW

Name of Subject - Computer Science

Which Examination Specification is Studied for this Course? OCR H446

Why should I study this course? -

Computer Science is the study of the principles and use of computers. Its study will make you question how the systems that you use in a modern day society work and encourage you to explore the concepts behind the technology you use and develop skills to become a creator of technology yourself.

Computer Science offers significant challenges, this is because it is a subject that encourages technological progress and breaking new ground, but this is what makes it exciting! Can you apply the concepts, knowledge and skills you have learnt in a creative way that others haven't thought of before? Can you identify an area of computer science that provides further technological development? Seems challenging – but you are going to love it! Computer Science will expand your mind!

Computer Science is offered at most prestigious universities either as a single honours or a joint honours subject studied alongside other disciplines e.g. Computer Systems Engineering, Computer Games Design, Computer Science & Artificial Intelligence, Mathematics & Computer Science and Computer Forensics. The very fact that you have been able to study Computer Science will help your future application be they for colleges, universities, apprenticeships or employment. Careers that the study of Computer Science supports include: • Secondary School Teacher • Database administrator • Software Developer • Web Application Developer • Computer Systems Analyst • Mobile App Developers • Information Security Analyst • Computer Network Architect • Software Tester • Network Manager

Who is suitable to study this course? - Students who have strong mathematical and problem solving skills. Students who understand the importance of Computer Science in everyday life and wish to proceed to higher education in a computing related profession.

What GCSE Qualifications Support the Study of this Course?

GCSE Computer Science, GCSE Mathematics

What are the Qualification Requirements for this Course?

Level 5 in GCSE Computer Science. If no GCSE in Computer Science, at least a level 6 in GCSE Mathematics *and a working knowledge of a programming language, such as Python, Visual Basic or C#.*

How is the Course Delivered?

Computer Science has a number of specialist teachers at both Portland and Valley who have experience teaching the course for a number of years now. You will have 3 hours a week of theory content and 2 hours a week of programming. Google Classroom is used extensively with computer science and all work will be completed using it. You will be set an independent flipped learning study task each week where you will be expected to research concepts and answer questions which will aid your understanding in theory lessons.

Subject Overview		
Half Term	Year 12	Year 13
Autumn 1	The characteristics of contemporary processors, input, output and storage devices Software and software development	Revision of content from AS Autumn term 1 as well as programming project work
Autumn 2	Exchanging data Data types, data structures and algorithms Legal, moral, cultural and ethical issues	Revision of content from AS Autumn term 2 as well as programming project work
Spring 1	Elements of Computational Thinking	Revision of content from AS spring term 1 and 2 as well as programming project work
Spring 2	Problem Solving and Programming	Revision

Summer 1	Algorithms to solve problems and standard algorithms	Revision
Summer 2	Programming Project Start	Revision and Exam

How is the Course Assessed?

Component 01 - Computer Systems - Written exam: 2 hours 30 minutes (40% of A Level)

Component 02 - Algorithms and Programming - Written exam: 2 hours 30 minutes (40% of A Level)

Component 03 - Programming Project: 20% of A Level

What is our Recommended Subject Reading list to Support your Study?

AS and A Level OCR Computer Science H446 H046 A-Level Course textbook by PG Online KS5 Computing Exam Pass Complete Officially Endorsed Guide OCR Oxford and Cambridge Examination Board A Level Paperback – Illustrated, 12 Sept. 2016 ISBN-10 1910523054

OCR AS Computer Science (H046) - Revision Notes Paperback – 7 July 2017 ISBN-10 154870539X

'Think Python' - Complete reading and tasks up to and including the section on 'files', stopping before section on 'classes'.
<http://greenteapress.com/thinkpython2/html/index.html>

Craig N Dave H446 Videos - <https://www.youtube.com/watch?v=dVi2B7fGvm4&list=PLCiOXwirraUBj7HtVHfNZsnwjyZQj97da>

https://www.sciencedaily.com/news/computers_math/computer_science/

<https://www.bbc.co.uk/news/topics/c008q115d07t/computing>