St Paul's Catholic School

COMPUTER SCIENCE

Examination Board: OCR

Entry requirements: Generic A-Level entry requirements

Course outline

This course introduces students to the fundamental principles of computing and covers the key areas of software, hardware, data, communications and people. It involves problem-solving and develops the ability to think creatively, analytically, logically and critically. In Year 2 the course develops with greater focus on programming and problem solving.

Course Units – description and assessment

Unit 1: Computing Principles (Exam)	Covers the characteristics of contemporary systems architecture, including: • Processors, input, output and storage devices • Software and software development • Programming • Exchanging data • Data types, data structures and algorithms • Boolean algebra • Legal, moral, ethical and cultural issues.
Unit 2: Algorithms and problem solving (Exam)	• Elements of computational thinking • Programming and problem solving • Pattern recognition, abstraction and decomposition • Algorithm design and efficiency • Standard algorithms • Systems analysis and design
Unit 3: Programming Project (Coursework)	Students will create a software project to solve a problem of their own choice • Analyse a problem • Design a solution • Implement the solution (programming) • Software testing • Evaluate a solution

Is the course right for you?

The emphasis of this course is on computational thinking – a kind of thinking used by humans and machines involving abstraction and decomposition. Students must be interested in the mechanics as well as the use of computing – they must want to know what can be computed and how rather than simply use other peoples' software packages.

What can you do after the course?

This course has been designed for students who want to move on to future study in the computing field or related disciplines. Its emphasis on computer science and computation means Computer Science A Level provides a valuable introduction to a growing academic and commercial area and computing students will be well equipped to face the challenge.

For more information see Mr Wood or Miss Collins