THE WORTHGATE SCHOOL
CANTERBURY

COURSE DESCRIPTOR

A-LEVEL COMPUTER SCIENCE

SUBJECT OVERVIEW

The OCR A Level Computer Science (H466) qualification provides students with a rigorous and in-depth understanding of the principles of computer science, combining theoretical knowledge with significant practical programming experience. The course builds on GCSE Computer Science by developing computational thinking, analytical skills, and the ability to design, develop and evaluate real-world computer systems and programs.

The qualification has been designed to support progression to computer science, engineering, mathematics and related degrees, as well as higher-level apprenticeships and careers in the digital and technology sectors. A strong emphasis is placed on problem solving, programming and independent project work, reflecting the skills required in higher education and industry.

PRIOR LEARNING REQUIRED

English, Mathematics

EXAM BOARD

OCR

COURSE CONTENT

Year 1	Year 2	NEA

▫ Elements of computational thinking, including abstraction, decomposition, thinking logically and thinking procedurally ▫ Problem solving and programming techniques ▫ Algorithms, including analysis, design and efficiency	▫ The characteristics of contemporary processors, including CPU architecture and performance ▫ Input, output and storage devices and their use in modern systems ▫ Software and software development, including systems software and development methodologies ▫ Data exchange, including networks, web technologies, compression, encryption and hashing ▫ Data types, data structures and algorithms ▫ Legal, moral, cultural and ethical issues related to computing	The programming project allows students to apply the knowledge and skills gained in Components 01 and 02 to a substantial, independently selected programming task. Students are required to: Analyse a problem Design a solution Develop and test a fully functional program Evaluate and document their solution The project must be written in a suitable programming language and demonstrates students' ability to manage a larger piece of work, mirroring practices used in higher education and the software industry.

ASSESSMENTS

Computer Systems (01)
2 hours 30 minutes written examination
40% of A Level
Algorithms and Programming (02)
2 hours 30 minutes written examination
40% of A Level
Programming Project (03)
Non-Examination Assessment
20% of A Level

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The qualification includes synoptic assessment, requiring students to draw together knowledge and skills from across the specification.

TEXTBOOKS/REVISION GUIDES

Title	ISBN	Author
OCR AS and A level Computer Science My Revision Notes: OCR A level Computer Science	978-1-910523-05-6 **1910523232**	PM Heathcote and RSU Heathcote PG Online

Summaries of each topic, student notes and past examination papers will be a major source of revision. A revision guide is also available for purchase. - PLEASE CHECK – I don't follow.

HIGHER EDUCATION PATHWAYS

Computer Science major from all U.K. universities – such as Mathematics with Computer Science, Computer Science for Artificial Intelligence, etc. Sample course please check website.

COMPLEMENTARY SUBJECTS OF STUDY

Mathematics, Physics and Business Studies

CURRICULUM DIRECTOR

Mr Scott Graham