COMPUTER SCIENCE

OCR GCSE IN COMPUTER SCIENCE

OPTION SUBJECT – CATEGORY A (BACCALAUREATE SUBJECT)

EXAMINATION BOARD: OCR

AWARD CODE: J277

WHY TAKE THIS COURSE?

A modern course for a modern world

This is a course that has real relevance in our modern world. Whilst learners will no doubt already have some knowledge of computers and related areas, the course will give them an in-depth understanding of how computer technology works and a look at what goes on "behind the scenes". As part of this, they will investigate computer programming, which many learners find interesting.

The fun of computing

Through this study of computer programming, the course will help learners develop critical thinking, analysis and problem solving skills. For many, it will be a fun and interesting way to develop these skills, which can be transferred to other subjects and even applied in day-to-day life.

In this way, the course will stimulate interest and engagement with technology and technology-related careers.

Looking to the future

Information technologies continue to have a growing importance. This means there will be a bigger demand for professionals who are qualified in this area. If learners want to go on to higher study and employment in the field of Computer Science, they will find that this course provides a superb stepping stone. Learners who have taken a Computer Science GCSE and who then progress to study the subject at A Level or university will have a sound underpinning knowledge of this subject area.

AIMS OF THE COURSE

The course will give learners a real, in-depth understanding of how computer technology works. It's a great way to develop critical thinking, analysis and problem solving skills.

OCR's GCSE (9-1) in Computer Science will encourage students to:

- Understand and apply the fundamental principles and concepts of Computer Science.
- Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs.
- Think creatively, innovatively, analytically, logically and critically.
- Understand the components that make up digital systems and how they communicate with one another and with other systems.
- Understand the impacts of digital technology to the individual and to wider society.

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COURSE STRUCTURE AND CONTENT

Students take J277/01 and J277/02 to be awarded the OCR GCSE (9-1) in Computer Science:

CONTENT OVERVIEW	ASSESSMENT OVERVIEW
J277/01 COMPUTER SYSTEMS ***This component will assess:*** ■ 1:1 Systems Architecture ■ 1:2 Memory and storage ■ 1:3 Computer networks, connections and protocols ■ 1:4 Network security ■ 1:5 Systems software ■ 1:6 Ethical, legal, cultural and environmental impacts of digital technology	**WRITTEN PAPER: 1 HOUR AND 30 MINUTES** **50% OF TOTAL GCSE** **80 MARKS** This is a non-calculator paper. All questions are mandatory. This paper consists of multiple choice questions, short response questions and extended response questions.
COMPUTATIONAL THINKING, ALGORITHMS AND PROGRAMMING ***This component will assess:*** ■ 2:1 Algorithms ■ 2:2 Programming fundamentals ■ 2:3 Producing robust programs ■ 2:4 Boolean logic ■ 2:5 Programming languages and integrated Development Environments	**WRITTEN PAPER: 1 HOUR AND 30 MINUTES** **50% OF TOTAL GCSE** **80 MARKS** This is a non-calculator paper. This paper has two sections: Section A and Section B. Students must answer both sections. All questions are mandatory. In Section B, questions assessing students' ability to write or refine algorithms must be answered using either the OCR Exam Reference Language **or** the high-level programming language they are familiar with.

ASSESSMENT

Candidates will be awarded a GCSE result on the scale 9 - 1.
The final grade will be made up from the marks from the two written papers.

ENTRY REQUIREMENTS

Bags of self-motivation and an ability to work independently. You must also be competent in **IT and Mathematics**, enjoy using algorithms and are logically minded. It goes without saying that you must have a **genuine interest** in computing programming.