Computer Science

Cambridge Assessment International Education (CAIE) IGCSE (Course Code: 0478)

Description

The aims of the course are to develop student's computational thinking skills. In completing this course students will improve their ability to solve problems using computers. This will mainly be done using a high-level programming language.

The course also contains theoretical elements, which include the component parts of a computer and how they interrelate, the use of the internet as a means of communication and its associated risks, and finally, the development and use of automated and emerging technologies.

Assessment Breakdown

Component 1	Computer Systems	A written paper lasting 1 hour 45 minutes and contains 75 marks of theory-based questions. Topics 1-6 are examined in this paper.	50%
Component 2	Algorithms, Programming and Logic	A written paper lasting 1 hour 45 minutes and contains 75 marks of practical-based questions. Topics 7-10 are examined in this paper. Although it is described as a practical examination, students will be expected to answer questions which will gauge their understanding of the practical tasks completed in lessons.	50%

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Course Outline

Year	Michaelmas Term	Lent Term	Trinity Term
9	1.1 Number representation 1.2 Text, sound and images 1.3 Data storage and compression 4.2 Types of programming language, translators and integrated development environments (IDEs) 7.0 Algorithm design and problem-solving 8.0 Programming	10 Logic gates 7.0 Algorithm design and problem-solving 8.0 Programming	3.1 Computer architecture 3.2 Input and output devices 3.3 Data storage
10	1.1 Number representation 10. Logic gates	2.1 Types and methods of data transmission 2.2 Methods of error detection 2.3 Encryption	3.4 Network hardware 4.1 Types of software and interrupts 5.1 The internet and the world wide web
11	5.2 Digital currency 5.3 Cyber security 9.0 Databases	6.2 Robotics 6.3 Artificial intelligence	Examination period

Additional Information

Students who join the course after the start of Year 9 will be expected to learn all topics previously studied. A basic understanding of a high-level programming language such as Java or Python is essential.