



# AS/A2 COMPUTING

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**Examination Board: OCR**

## ENTRANCE REQUIREMENTS

No previous knowledge of computer programming is required although a familiarity with Windows, Word, Excel and Access would be an advantage. An ability to think logically is essential

## Introduction

The difference between Computing and ICT is that a computing course concentrates on learning how to program to create your own software to solve problems and ICT is using pre-existing software such as Excel, Powerpoint, Access etc to create solutions to problems. In computing students learn how to program using the programming language Visual Basic.

Structured programming techniques are developed through a series of learning worksheets which start with very basic instructions and gradually introduce new commands and control structures. Assignments are used to practice the skills developed by the worksheets.

The course is made up of four modules one of which is coursework. The AS modules make up 100% of the AS marks and 50% of the A2 marks. The A2 theory module makes up 30% of the A2 marks and the coursework project makes up 20% of the A2 mark. Module tests can be taken in January and June.

## AS Modules

Computer Fundamentals

- Hardware
- Software
- Data: its presentation, structure and management
- Data transmission and networking
- Systems development life cycle
- Characteristics of information systems
- Implications of computer use

Programming Techniques and Logical Methods

- Designing solutions to problems
- The structure of procedural programs
- Data types and data structures
- Common facilities of procedural languages
- Writing maintainable programs
- Testing and running a solution

## A2 Modules

Advanced Computing Theory

- The function of operating systems
- The function and purpose of translators
- Computer architecture
- Data representation
- Data structures and data manipulation
- High-level language programming paradigms
- Programming techniques
- Low-level languages
- Databases

Computing Project (Coursework)

- Definition, investigation and analysis
- Design
- Software development and testing
- Documentation
- Evaluation
- The written report

## Careers

Almost every career involves some aspects of computing and having knowledge and skills in this area is essential to all. Students will also have the opportunity to pursue new and exciting careers such as artificial intelligence, nano technology, games design, web design and many more. The computing industry is one of the fastest growing sections of the economy and there is great demand for people with the right skills. Currently there is a major skills shortage in this area.