COMPUTER SCIENCE

Computing is of enormous importance to the economy, and the role of Computer Science as a discipline itself, as an 'underpinning' subject across science and engineering, is growing rapidly. Young people need to develop skills that will enable them to pursue a career in Computer Science if they so choose, and which will also help them gain valuable skills for life, eg. in innovation, logic, resourcefulness, problem solving and clarity. These skills will enable them to become authors of computational tools rather than simply users. Technology changes but the principles and concepts upon which they are built remain constant. A good grounding in Computer Science will teach young people how to deal with change later in life and play an active and effective role in the digital world.

Computer Science develops valuable programming and computational thinking skills, which are increasingly relevant to a wide variety of jobs. Employers want workers with an understanding of rigorous principles that can be applied to changing technologies.

There is opportunity for candidates to apply and consolidate their knowledge of computer programming by carrying out practical tasks that will develop their capacity for innovative thinking, creativity and independence. They will develop the skills of design and evaluation, and they will test and problem-solve when errors occur in both their own systems and those of others.

COMPUTER SCIENCE

This specification in Computer Science enables learners to:

- understand how computer systems work and become discerning computer users, able to make informed decisions regarding hardware, software, storage, memory, networks and programming
- acquire and apply creative and technical skills, knowledge and understanding of computers and computer programs in a range of contexts
- improve their understanding of current technologies and trends towards the future
- recognise potential risks when computing, and develop safe and secure systems using professional standards

SUMMARY OF ASSESSMENT

Unit 1: Understanding Computer Science 45% External Assessment: 1½ hours 90 Marks (90 UMS)
This examination will assess understanding of the theory content of the specification with a mixture of short, medium and longer answer questions.
Unit 2: Solving Problems Using Computers 30% External Assessment: 2 hours 30 Marks (60 UMS)
This assessment consists of a series of tasks set and marked by WJEC and completed on screen by candidates. These tasks will assess the practical application of knowledge and understanding.
Unit 3: Developing Computing Solutions 25% Controlled Assessment: 15 hours 50 Marks (50 UMS)
This controlled assessment will give candidates the opportunity to develop a piece of work using programming software following a task brief from a choice of two issued by WJEC.

INFORMATION & COMMUNICATION TECHNOLOGY

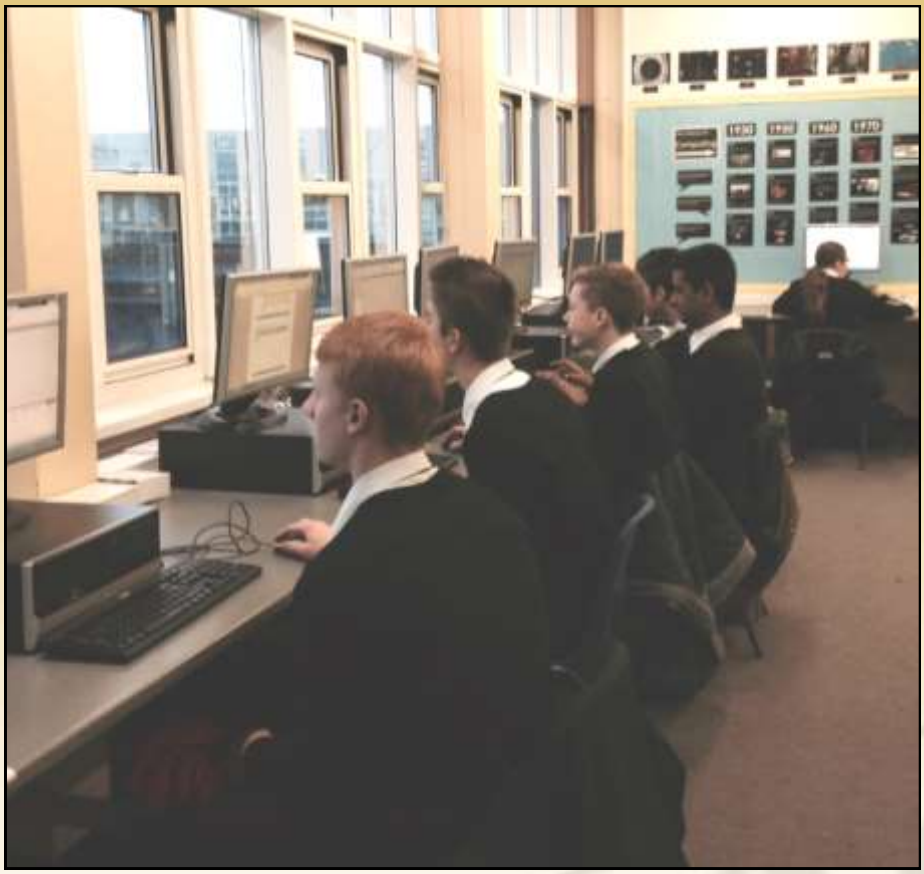
ICT is an important aspect of modern society. Employers and higher education institutions stress the importance of being computer literate. All careers require a certain degree of computer literacy. This GCSE course offers the pupils the opportunity to use many industry standard packages.

This course offers the opportunity for candidates to identify and solve real problems by designing information and communication systems in a wide range of contexts. ICT develops candidates' capacity for imaginative, innovative thinking, creativity and independence. The specification encourages the investigation and study of ICT in a variety of contexts. Candidates are given opportunities to acquire competence, capability and critical skills through the creation, implementation, use and evaluation of a range of information and communication systems. Multimedia is a topic that has a much greater influence in this specification. In addition to Microsoft Office, industry standard software such as Serif, Fireworks, Audacity and Moviemaker will be used to create multimedia solutions.

This specification in ICT enables learners to:

- become independent and discerning users of ICT, able to make informed decisions about its use and aware of its implications for individuals, organisations and society
- acquire and apply creative and technical skills, knowledge and understanding of ICT in a range of contexts develop ICT-based solutions to solve problems
- develop their understanding of current and emerging technologies and their social and commercial impact develop their understanding of the legal, social, economic, ethical and environmental issues raised by ICT
- recognise potential risks when using ICT, and develop safe, secure and responsible practice

INFORMATION & COMMUNICATION TECHNOLOGY



SUMMARY OF ASSESSMENT

Unit 1: Understanding ICT — Full Course 20%; Short Course 40% External Assessment: 1½ hours
This examination paper will assess the requirements of the Key Stage 4 Programme of Study for ICT and the functional elements of ICT in a home and school context.
Unit 2: Solving Problems with ICT — Full Course 30%; Short Course 60% Controlled Assessment: 22½ hours
This controlled assessment consists of a portfolio of work which shows candidates' attainment in obtaining and interpreting different types of information; using, developing and communicating information to meet the purpose of their studies and presenting the results of their work.
Unit 3: ICT in Organisations — Full Course 20% External Assessment: 1½ hours
This examination paper will assess the 'application' content of ICT in a business and industry context.
Unit 4: Developing Multimedia ICT Solutions — Full Course 30% Controlled Assessment: 22½ hours
This controlled assessment will give candidates the opportunity to develop a piece of work using multimedia software following a single task brief issued by WJEC.