Computing Curriculum - GCSE

Intent: To ensure that our students have the necessary skills needed to embrace the challenges of the quaternary sector as it is now as well as developing the skills that will be needed as this fast moving sector evolves. To link the curriculum to the needs of industry and do develop wider 21rst century skills that are entirely transferable in relation to the changing demands of our economy.

Explore

Students are expected to take risks with their learning and to develop resilience in terms of learning from any errors or mistakes. Critical thinking, lateral thinking and a positive approach are all encouraged.

Fulfil Students organise their topics of study in a way that encourages personal reflection of progress by

reflection of progress by topic. Students set goals and are encouraged to selfactualise.

Flourish

The curriculum is formally linked to the needs of industry as well as to the examination board. Students adopt an "engineering mindset" where their learning is centred around outcomes that have a wider purpose In society.

Exam Board: OCR J276

1.1 System Architecture

- Von Neumann Architecture.
- Central Processing Units.

1.2 Memory

- ROM, RAM.Virtual men
- Virtual memory.

1.3 Storage

Types and characteristics of storage.

1.4 Wired and Wireless Networks

- LAN and WAN.
- Client-Server, Peer-to-Peer.

1.5 Network Topologies

IP addresses, protocols.

1.6 System Security

- Forms of attack.
- Preventing vulnerabilities.

1.7 System Software

Operating systems, Utilities.

1.8 Ethics

Legislative and cultural implication of technological change.

2.1 Algorithms

Abstraction, Decomposition, Searches.

2.2 Programming

Sequence, Selection, Iteration, Data Types.

2.3 Robust Programs

Defensive design, types of errors.

2.4 Computational Logic

Binary, Boolean operators, truth tables.

2.5 Translators and Languages

Assemblers, Compilers, Interpreters.

2.6 Data Representation

ASCII, Hexadecimal, Compression, file sizes.

Key skills and concepts developed in Business

- Use computing and industry-specific terminology to develop solutions for computing challenges within programming and design.
- Apply learning to familiar and unfamiliar contexts in order to create and synthesise solutions.
- Develop problem solving and decision making skills relevant to the quaternary sector using exam board and industry specific contexts.
- Create and recommend solutions to computing related issues including systems development, programming, networking or ethical considerations.

Wider Impact:

Computing students are required to solve challenges and to create potential solutions.

To do this, students develop a core knowledge that is entirely centred on the latest requirements of industry. We achieve this through our links with quaternary sector providers, such as with ARM Holdings, so that the skills taught through the qualification are augmented by the current developments within the economy..

Students use their core knowledge, including the development of key transferable skills, to recommend and justify their solutions to a context.

Students are also required to create bespoke coded solutions to challenges set, including challenges that require an ethical or environmental consideration.