KS5 Curriculum Overview: Level 3 Alternative Academic Qualification - BTEC National in Information Technology (Extended Certificate)

Rationale:

The Pearson Level 3 Alternative Academic Qualification BTEC National in Information Technology (Extended Certificate) allows students to study the fundamental knowledge of Information Technology covering the role and implications of using Information Technology systems and cyber-security threats and how to manage attacks. Students will also develop important skills for creating websites to meet a specific purpose and to manage data through the development of a relational database solution. There are two examined units and two internally assessed units where students will engage in practical tasks to develop their Information Technology skills and knowledge

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	Knowledge/Skills End Points
Y12 Autumn	Understand how the principles of relational database models, data storage and normalisation are used to create effective relational database solutions. Design a relational database solution to meet client requirements Develop a relational database solution to meet client requirements	This unit is Internal assessed through a Pearson-Set Assignment Brief (PASB)	Set in line department policy.	PowerPoint on shared area for Principles of relational databases. Practical booklets to create a training database for design and development.	Conduct research to analyse how the principles of relational database management systems, data storage and normalisation are used to meet a specific purpose and develop planning evidence to meet a client's requirements. Produce, review and refine designs in an iterative process to meet a client's brief. Use tools and techniques to create a relational database solution to meet a client's requirements.
Y12 Spring /Summer	Students will study the role of IT systems and the implications of their use in personal and professional situations. Students will gain knowledge and understanding of issues relating to the use of IT in personal and professional situations.	Exam questions, and notes	Each lesson has a homework sheet that complements the lesson a range of these	Using the PG online Pearson resources that combine a combination of PowerPoint.	• Describe digital devices that form part or all of IT systems: – multifunctional devices – servers –application, web – embedded systems – sensors, Internet of Things (IoT)

	Unit introduction IT systems have a significant role in the world around us and play a part in almost everything we do. Having sound knowledge and understanding of how to effectively select and use appropriate IT systems will benefit you personally and professionally. You will explore the relationships between the hardware and software that form an IT system, how systems work individually and together, and the relationship between the user and the system. You will examine issues related to the use of IT systems and the impact that they have on organisations and individuals. This unit will give you a fundamental understanding of all areas of IT, supporting your progression to an IT-related higher education course.. The key topics covered in this unit are : A: Explore the concepts and implications of the use of, and relationships among devices that form IT systems B: Transmitting data	Followed by an end of topic/module assessment. **A1 -** Functions and use of digital devices, and the notation used to represent the design of IT systems **A2** Peripheral devices and media **A3** Computer software in an IT system	can be picked from the main topic. Student will also be encourage to read the course book and to make comprehensive notes as well as answer the exam questions in the book		• Describe Assistive technologies including: – braille displays, sip-and-puff switches, eye-tracking software • Understand different types of operating systems including: – Batch, distributed, network OS, real-time OS, single user, multi-user • Know the role of the operating system in managing: – security, memory management, device drivers • Describe factors impacting the choice of user interface including: – command line • Describe factors impacting the choice of operating system including: – security • Describe the factors affecting the choice and use of utility and application software – security • Describe the principles and implications of open source and proprietary operating systems and application software • Describe the features of common file types and formats for: application software

	C: Operating online
	D: Protecting data and information
	E: Impact of using IT systems
	F: Issues
		A4 Choosing IT systems			• Examine the implications of selecting and using different connection types
					• Understand different network topologies and their implications for individuals and organizations including:
					  ○ Ring
					• Describe the factors affecting the choice of network including:
					  ○ specifications, security
					• Describe protocols used for:
					  ○ Email (POP)
					• Understand factors affecting the choice of compression types including:
					  ○ Lossy
					  ○ Lossless
					• Draw a diagram to show how an IT system works
					• Know the following cloud computing models:
					  ○ Infrastructure as a Service (IaaS)
					• Know the factors that affect the use and selection of online systems including:
					  ○ Scalability
					• Understand the ways of communicating and interacting

					with online communities including: ○ Wiki ○ Forum • Describe the considerations for individuals and organizations of using and accessing online communities including: ○ Integration with current systems ○ Working practices and company policies •
Y12 Summer	Revision for Unit 1 exam	The unit will be assessed through one examination of 90 marks lasting 2 hours. Students will be assessed through a number of short- and long-answer questions. The questions will assess knowledge and understanding of IT systems and the implications of their use in personal and professional situations.	Revision for exam	Past papers	