

Subject	Computing		Year		7	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	7.1 Digital Learners & eSafety	7.2 Understanding Computers	7.3 Data Representation	7.4 Networks	7.5 Spreadsheets	7.6 WyeFest
Knowledge	Students will be able to demonstrate the Office software skills they have acquired. They know a range of risks when going online and ways to protect themselves. .	Students will understand the relationship between hardware and software in a computer system. Students should know a range of hardware devices and software types and be able to explain the function of these devices within computer system.	Students will learn how data is represented in a computer system. They will know what binary numbers are and their connection to denary numbers. They will know what encryption means and why it is necessary. They will learn to manipulate binary numbers. They will represent images in binary.	Students will learn what a computer network is. They learn when Local Area Networks, Wide Area Networks and Personal Area Networks are used.	Students will understand the tools available within spreadsheet software and how they can be applied to a fictional scenario called 'Harry Plotter'.	Students will learn how to create various graphical products such as logos, presentations, posters and videos. These are all based on a set scenario and target audience to promote our annual 'WyeFest' event.
Skills	They will learn design skills such as mind maps and newspaper articles as well as internet research skills to improve their understanding of the world around them. They will learn how to evaluate their own and others work to develop	Student will have used most peripheral devices and may have heard of some internal components. Students will be using the internet to improve research skills and learning how to understand the basic workings of a computer.	Students may have been taught data representation, but it is not part of the KS2 curriculum so may be new learning depending on primary school curriculum. Students will be able to convert binary to denary and back again. They will also	They will know the features of LANs. They will learn how WANs function on a global scale. Students will learn about different network topologies, network hardware, packet transfers, benefits, and drawbacks of computer networks. A key goal of this unit is to demystify the	This topic will build on the idea of data manipulation and presentation of data to see trends and pattern which was looked at in the last topic. Students will know the basic elements of a spreadsheet and the use of cell references in a few	Students will learn how to effectively create promotional material and how to promote key information to groups of people. Students will use graphic software to design all elements of the project.

			know how to interpret ASCII and convert binary-denary-hexadecimal and back again.	Internet and improve understanding of common systems students use daily.	formulas including SUM, AVERAGE, MAX, MIN, COUNT, IF, VLOOKUP. Students will be able to produce a chart.	
Key vocabulary	E-Safety, Grooming, Social Media, Cyber Bullying, Online Abuse/Harassment, Username, Password, Fake News	Hardware / Software / Input / Output / Random Access Memory / Read Only Memory / Processor / Central Processing Unit / Operating System / Application	Binary / Denary / Byte/ Bit / hexadecimal/ASCII	Network / Topology / LAN / WAN / PAN/ Internet / World Wide Web / Packets / Malware / Infrastructure / Server	Spreadsheet / Worksheet / Workbook / Formula / Function / Cell Reference / Modelling / Calculation / Formatting / Conditional	Logos/shapes/icons/ target audience/colour schemes/readability/ key information
Assessment	Project Based Assessment Task	End of topic knowledge test	End of topic knowledge test	End of topic knowledge test	Project Based Assessment Task	Peer marking and self-marking throughout and end of topic test

Subject	Computing		Year		8	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	8.1 Cyberfirst	8.2 Computational Thinking	8.3 Data Representation	8.4 Databases	8.5 Content Creation	8.6 Data Analysis
Knowledge	Students will learn about the ever-changing Cyber world. They will learn about Cyber Security jobs, complete research into attacks and learn about Cryptography.	Students will learn the computational thinking methods behind creating a program.	Students will learn how data is represented in a computer system. They will know what binary numbers are and their connection to denary numbers. They will know what encryption means and why it is necessary. They will learn to manipulate binary numbers. They will represent images in binary and sound	Students will already understand that all organisations hold data on them. In this unit they will learn, the type of organisations that hold their data and how to manipulate it.	Students will learn how to create material using graphic design and video-based editing software. Content creation is something they see daily through use of social media. Students will be creating content for a chosen product.	Students will understand the tools available within spreadsheet software and how they can be applied to a supermarket scenario
Skills	Students will learn a range of new skills including: - Manipulating data to come to conclusions - Completing research on Cyber security attacks - Modifying pages using HTML coding.	Using the methods learnt the students will apply the knowledge to creating a pac man game using Scratch. Students will learn to : - Use pseudocode or flowcharts to solve a problem - Move sprites - Import backgrounds	Students will be able to build on knowledge from Year 7. Students will be able to convert binary to denary and back again. They will also know how to interpret ASCII, convert binary-denary-hexadecimal, and back again. Students will also be	Students will learn how to create a database including: - Setting up tables - Using validation rules - Searching tables for data - Creating forms and reports/	Students will be able to select relevant materials including images, video footage and music to edit a small clip and promote a product.	Students will recap the basic elements of a spreadsheet and the use of cell references in a few formulas including SUM, AVERAGE, MAX, MIN, COUNT, IF, VLOOKUP. Students will be able to produce a chart.

	- Solving puzzles against the clock	- Create and keep scores	able to represent data in compression, images and sound.			
Key vocabulary	Cyber/Attack/ Encryption/Firewall/ Authentication/ HTTP/ HTML/ Data Mining/ Cryptography	Decomposition/ Algorithm/Pattern Recognition/ Abstraction/ Bubble Sort/ Binary/ Linear/ Merge Sort	Binary / Denary / Encryption / Decryption / Cipher / Byte/ Bit / Resolution / Colour Depth / Structure	Database/ table/ record/ primary key/foreign key/ validation rules/ queries/ reports/ forms	Video/social media/ editing/sound effects/ clipping, images/ promotion	Spreadsheet / Worksheet / Workbook / Formula / Function / Cell Reference / Modelling / Calculation / Formatting / Conditional
Assessment	End of topic knowledge test	End of topic knowledge test	End of topic knowledge test	Project based assessment	Project based assessment	Project based assessment

Subject	Computing		Year		9	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	9.1 AI	9.2 User Interface Design	9.3 Computer Systems	9.4 Data Representation	9.5 Living in a digital society	9.6 Programming Fundamentals
Knowledge	Students will learn about the forever changing and more popular use of AI in both society and personal use.	Students will know what a user interface is and types of UI. They will know where UIs are used and the design principles which ensure they meet user needs.	Students will learn about the workings of a computer. This will include CPU, FDE, Memory and Networks. Students will research careers related to Computer Systems.	Students will learn how data is represented in a computer system. They will know what binary numbers are and their connection to denary numbers. They will know what encryption means and why it is necessary. They will learn to manipulate binary numbers. They will represent images in binary and sound	Students will know about a lot of topics covered in this unit, just from being raised in the digital age. Students will improve understanding in the following areas: - Data - Protection - Governments - AI - Automation - Environment - Legal & Ethical	Students will learn the basics of Python. Students will learn to predict the outcome using pseudocode and flowcharts and how to create programs.
Skills	Students will be able to identify what AI is and how it can be used. Students will be able to give examples of real world application of AI and be able to identify the positives and negatives of using it.	Students will be able to use a range of design tools to plan a UI for specific purpose. Students will produce a prototype UI using presentation/graphic manipulation tools to create a UI which supports users through its use.	Students will be able to define what different parts of a computer and the parts can affect the performance. Students will be able to identify jobs in Computing.	Students will be able to build on knowledge from Year 7 and 8. - Students will be able to convert binary to denary and back again. They will also know how to interpret ASCII and convert	Students will be able to build theory knowledge from real world applications using research skills. This will include: - Google Street View Privacy Case - Data Protection Act - Computer Misuse Act	Students will be able to: - Define their own functions - Write programs independently - Use libraries - Write a set of complex instructions in Python. - Define variables.

				binary-denary-hexadecimal and back again. Students will also be able to represent data in compression, images and sound.	- Copyright Act - Strong/Weak Passwords - Net Neutrality	- Predict the outcome of simple loops and conditional statements
Key vocabulary	AI/Jobs/Cyber/Hacking/Military/School/Education	User Interface / GUI / Text Based / Speech/Sensor/ WiMP/ User Requirements / Demographics / House Style / Navigational Components / PopUp Messages/ Icons / Intuitive Design	CPU/FDE/RAM/ROM /Star/Mesh/Bus/LAN/WAN/PAN	Binary / Denary / Encryption / Decryption / Cipher / Byte/ Bit / Resolution / Colour Depth / Structure	Neutrality / Copyright/ Data Protection/ Password/ Privacy/ Automation/ Artificial Intelligence	Python/IDLE/Debug/ Loops/IF/ELIF/ Sequence/Variable/ Pixel/Selection/ Condition
Assessment	End of topic test	Project Based Assessment	End of topic test	Peer marking and self-marking throughout and end of topic test	End of topic test	End of topic test

Subject	BTEC Tech Award Digital Information Technology		Year		10 ICT	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	BTEC Digital Information Technology: Component 1 – Exploring Principles of User Interfaces	BTEC Digital Information Technology: Component 1 – Exploring Principles of User Interfaces	BTEC Digital Information Technology: Component 1 – Exploring Principles of User Interfaces	BTEC Digital Information Technology: Component 2 – Collecting, Presenting and Interpreting Data	BTEC Digital Information Technology: Component 2 – Collecting, Presenting and Interpreting Data	BTEC Digital Information Technology: Component 2 – Collecting, Presenting and Interpreting Data
Knowledge	This topic will build on prior learning from Year 9 User Interface Design. Students will know what a user interface is and types of UI. They will know where UIs are used and the design principles which ensure they meet user needs.	This topic will build on prior learning from Year 9 User Interface Design. Students will know what a user interface is and types of UI. They will know where UIs are used and the design principles which ensure they meet user needs.	This topic will build on prior learning from Year 9 User Interface Design. Students will know what a user interface is and types of UI. They will know where UIs are used and the design principles which ensure they meet user needs.	Students will understand the tools available within spreadsheet software and how they can be applied to a range of scenarios.	Students will understand the tools available within spreadsheet software and how they can be applied to a range of scenarios.	Students will understand the tools available within spreadsheet software and how they can be applied to a range of scenarios.
Skills	Students will be able to use a range of design tools to plan a UI for specific purpose. Students will produce a prototype UI using presentation / graphic manipulation tools to create a UI which supports users through its use.	Students will be able to use a range of design tools to plan a UI for specific purpose. Students will produce a prototype UI using presentation/graphic manipulation tools to create a UI which supports users through its use.	Students will be able to use a range of design tools to plan a UI for specific purpose. Students will produce a prototype UI using presentation/graphic manipulation tools to create a UI which supports users through its use.	Students will recap the basic elements of a spreadsheet and the use of cell references in a few formulas including SUM, AVERAGE, MAX, MIN, COUNT, IF, VLOOKUP. Students will be able to produce charts and pivot tables.	Students will recap the basic elements of a spreadsheet and the use of cell references in a few formulas including SUM, AVERAGE, MAX, MIN, COUNT, IF, VLOOKUP. Students will be able to produce charts and pivot tables.	Students will recap the basic elements of a spreadsheet and the use of cell references in a few formulas including SUM, AVERAGE, MAX, MIN, COUNT, IF, VLOOKUP. Students will be able to produce charts and pivot tables.

Key vocabulary	User Interface / GUI / Text Based /Speech/Sensor/ WiMP/ User Requirements / Demographics / House Style / Navigational Components / PopUp Messages/ Icons / Intuitive Design	User Interface / GUI / Text Based /Speech/Sensor/ WiMP/ User Requirements / Demographics / House Style / Navigational Components / PopUp Messages/ Icons / Intuitive Design	User Interface / GUI / Text Based /Speech/Sensor/ WiMP/ User Requirements / Demographics / House Style / Navigational Components / PopUp Messages/ Icons / Intuitive Design	Spreadsheet / Worksheet / Workbook / Formula / Function / Cell Reference / Modelling / Calculation / Formatting / Conditional	Spreadsheet / Worksheet / Workbook / Formula / Function / Cell Reference / Modelling / Calculation / Formatting / Conditional	Spreadsheet / Worksheet / Workbook / Formula / Function / Cell Reference / Modelling / Calculation / Formatting / Conditional
Assessment	BTEC Assessment Schedule – December of Year 10	BTEC Assessment Schedule - December of Year 10	BTEC Assessment Schedule - December of Year 10	BTEC Assessment Schedule – May of Year 10	BTEC Assessment Schedule – May of Year 10	BTEC Assessment Schedule – May of Year 10

Subject	GCSE Computer Science		Year		10 CS	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	1.1 Systems Architecture 2.2 Programming Fundamentals	1.2 Memory & Storage 2.2 Programming Fundamentals	1.2 Memory & Storage 2.2 Programming Fundamentals	1.3 Computer networks, connections and protocols 2.2 Programming Fundamentals	1.3 Computer networks, connections and protocols 2.2 Programming Fundamentals	1.6 Ethical, legal, cultural and environmental impacts of digital technology
Knowledge	<u>1.1 Systems Architecture</u> Students will learn the parts of a Von Neumann CPU, registers and what happens at each stage of the fetch, decode and execute cycle. <u>2.2 Programming Fundamentals</u> Students will be introduced to programming in Python. They will spend this term recapping what they have learnt in Year 9 and using this knowledge to answer theory questions about relating knowledge such as:	<u>1.2 Memory and Storage</u> Students will build n prior knowledge from Year 7 and Year 9 to understand: - Primary and Secondary Storage - Units of data storage - Data Storage <u>2.2 Programming Fundamentals</u> Students will know a range of data types that can be used in a computer program. They will use Python to show they can declare variables and constants in a program. They will also demonstrate	<u>1.2 Memory & Storage</u> Students will build on prior knowledge from Year 7 and Year 9 to understand: - Primary and Secondary Storage - Units of data storage - Data Storage <u>2.2 Programming Fundamentals</u> Students will know how to use iteration and selection (nested and singular) in their programs. They will be able to use relational and Boolean operations in their iteration and	<u>1.3 Computer networks, connections and protocols</u> Students will build n prior knowledge from Year 7 and Year 9 to understand: - Networks and topologies - Wired & Wireless Connections - Protocols & Layers <u>2.2 Programming Fundamentals</u> Students will know what a data structure is (Array [2D and 3D] and Records) problems using the skills learnt.	<u>1.3 Computer networks, connections and protocols</u> Students will build n prior knowledge from Year 7 and Year 9 to understand: - Networks and topologies - Wired & Wireless Connections - Protocols & Layers <u>2.2 Programming Fundamentals</u> Students will be able to write a validation routine and authentication routine. Students will know what testing means in the	Students will be able to explain a range of ethical, legal and environmental impacts of digital technology on society. They will also know the risks these technologies pose. Topics covered will be cyber security, mobile tech, cloud storage, hacking, wearable tech, computer-based implants, and autonomous vehicles.

	- Variables - Routines - Constants	assigning data to a variable from user input and in program calculations. They will be able to use arithmetic operations and a range of string manipulation methods.	selection. They will understand the concept of a subroutine and be able to use these in their programs.		context of a program. They will understand what test data is and types of test data. They will know the different types of error that can occur in a computer program and identify errors in an algorithm or program.	
Skills	<u>1.1 Systems Architecture</u> Students will be able to identify each part of a CPU and be able to explain what happens at each section. Students will be able to explain what an embedded system is and give examples of it. They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.2 Programming Fundamentals</u>	<u>1.2 Memory & Storage</u> Students will build an understanding of: - RAM/ROM - Virtual Memory - Types of Storage - Pros & Cons of Storage - Units of Data Storage - Binary to Denary Hexadecimal conversions - ASCII and Unicode - Binary Shifts - Metadata - How data is stored in images and sound. They will also be able to use the	<u>1.2 Memory & Storage</u> Students will build an understanding of: - RAM/ROM - Virtual Memory - Types of Storage - Pros & Cons of Storage - Units of Data Storage - Binary to Denary Hexadecimal conversions - ASCII and Unicode - Binary Shifts - Metadata - How data is stored in images and sound.	<u>1.3 Computer networks, connections and protocols</u> Students will build an understanding of: - LAN/WAN & PAN - Factors that affect networks - Hardware needed in LAN networks - DNS - Cloud Systems - Web Servers - Ethernet & WiFi - Common Protocols - Encryption They will also be able to use the knowledge from this	<u>1.3 Computer networks, connections and protocols</u> Students will build an understanding of: - LAN/WAN & PAN - Factors that affect networks - Hardware needed in LAN networks - DNS - Cloud Systems - Web Servers - Ethernet & WiFi - Common Protocols - Encryption They will also be able to use the knowledge from this	Students will be able to identify the different laws surrounding the use of computers. They will be able to explain the moral, legal and ethical issues that can arise when using computers. They will be able to link this knowledge to an exam scenario.

	Students will be able to produce basic programs in Python and answer questions on the Component 2 theory paper using this practical knowledge.	knowledge from this unit to answer questions in the Component 1 paper. <u>2.2 Programming Fundamentals</u> Students will be able to apply key knowledge such as arithmetic operations and string manipulation to a range of Python programs. They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.2 Programming Fundamentals</u> Students will be able to apply key knowledge such as iteration and selection to a range of Python programs. They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	unit to answer questions in the Component 1 paper. <u>2.2 Programming Fundamentals</u> Students will be able to use these in a program. Students will be able to use random number generation in their program. Students will practice designing a solution to a variety of computing. They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	unit to answer questions in the Component 1 paper. <u>2.2 Programming Fundamentals</u> Students will be able to write programs in Python using all of the key skills they have learnt this year. They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	
Key vocabulary	CPU/Registers/ Embedded Systems/Von Neumann/ Choices/ Performance Validation / Authentication / Testing / Normal (Typical) / Boundary (Extreme) /	Bit/byte/nibble/ Kilobyte/terabyte/ Compression/ Optical/ Magnetic/ Solid State/ RAM/ ROM/Shifts Validation / Authentication / Testing / Normal (Typical) / Boundary (Extreme) /	Bit/byte/nibble/ Kilobyte/terabyte/ Compression/ Optical/ Magnetic/ Solid State/ RAM/ ROM/Shifts Validation / Authentication / Testing / Normal (Typical) / Boundary (Extreme) /	FTP/HTTP/TCP/POP SMTP/IMAP/ Star/ Mesh/ DNS/ Routers/Switch/ NIC/ LAN/WAN/PAN TCP/IP Validation / Authentication / Testing / Normal (Typical) / Boundary (Extreme) /	FTP/HTTP/TCP/POP SMTP/IMAP/ Star/ Mesh/ DNS/ Routers/Switch/ NIC/ LAN/WAN/PAN TCP/IP Validation / Authentication / Testing / Normal (Typical) / Boundary (Extreme) /	Privacy / Security Services / Terrorism / Cloud Computing / Ethical Hacking / Prosthetic limbs / Cochlear Implant

Subject	BTEC Tech Award Digital Information Technology			Year		11 ICT
	Term 1	Term 2	Term 3	Term 4	Term 5	Study leave
Topic/ Specification reference	BTEC Digital Information Technology: Component 3 – Exploring Principles of User Interfaces	BTEC Digital Information Technology: Component 3 – Exploring Principles of User Interfaces	BTEC Digital Information Technology: Component 3 – Exploring Principles of User Interfaces	Coursework improvements & Exam Resits	Coursework improvements & Exam Resits	
Knowledge	Students should learn about how current and modern technologies are used by and have an impact on organisations and their stakeholders. Students need to know the ways in which organisations and associated individuals use modern technologies to exchange information, communicate, and complete work-related tasks.	Students must understand how the increased reliance of organisations on digital systems to hold data and perform vital functions presents a range of challenges and dangers. They should understand the nature of threats to digital systems and ways that they can be mitigated through organisation policy, procedures and the actions of individuals. They should be able to apply knowledge of cyber security to a range of vocational contexts.	Students should understand the wider implications of digital systems and their use. Students should understand how legislation covering data protection, computer crimes and intellectual property has an impact on the way that organisations and individuals use digital systems and data. Students should understand how individuals in the digital sector plan solutions and communicate meaning and intention. They should understand how different forms of written and diagrammatical communication can be	Improvements based on coursework marking. Students to work on revision material for exam resits	Improvements based on coursework marking. Students to work on revision material for exam resits	

			used to express understanding and demonstrate the flow of data and information.			
Skills	Students must be able to apply their knowledge to a range of vocational contexts.	Students must be able to apply their knowledge to a range of vocational contexts.	Students must be able to apply their knowledge to a range of vocational contexts. Students should understand the procedures that organisations must follow in order to conform to legal requirements and professional guidelines.			
Key vocabulary	Cloud/Implications/Computing/Storage/Adhoc/Platform/Interface/Scheduling/Collaboration/Communication	Malware/DDOS/Man in the middle/Trojan/Ransomware/Spyware/ Engineering/ Espionage/Data Loss/Reputation/Disaster Recovery	Data Flow/Information Flow/ Flowcharts/ Legal/Ethical/Neutrality/Data Protection/Environmental/Shared Data			
Assessment	End of topic tests BTEC Assessment – February of Year 11	End of topic tests BTEC Assessment – February of Year 11	End of topic tests BTEC Assessment – February of Year 11	Coursework marking/moderation End of topic tests BTEC Assessment – June of Year 11	Coursework marking/moderation End of topic tests BTEC Assessment – June of Year 11	

Subject	GCSE Computer Science				Year	11 CS
	Term 1	Term 2	Term 3	Term 4	Term 5	Study Leave
Topic/ Specification reference	1.4 Network Security 2.1 Algorithms	1.4 Network Security 2.3 Producing robust programs	1.5 System Software 2.4 Boolean Logic	1.5 System Software 2.5 Programming languages and IDE	Revision & Exam Preparation	
Knowledge	<u>1.4 Network Security</u> This will build on the year 7 Networks and Year 9 System Security units on computer networks that look at network security methods. This will develop student understanding in terms of how the methods work and which are best in different scenarios. <u>2.1 Algorithms</u> Students will know and explain the terms; algorithm, decomposition, abstraction. They will know how linear and binary search work and compare them for efficiency and ease. Students will know how the merge and bubble sort work and	<u>1.4 Network Security</u> This will build on the year 7 Networks and Year 9 System Security units on computer networks that look at network security methods. This will develop student understanding in terms of how the methods work and which are best in different scenarios. <u>2.3 Producing robust programs</u> Students will build knowledge in the following topic areas: - Defensive Design - Testing	<u>1.5 System Software</u> Students will build knowledge in the following topic areas: - Operating Systems - Utility Software <u>2.4 Boolean Logic</u> Students will build knowledge in the following topic areas: - Boolean Logic	<u>1.5 System Software</u> Students will build knowledge in the following topic areas: - Operating Systems - Utility Software <u>2.5 Programming languages and IDE</u> Students will build knowledge in the following topic areas: - Languages - Integrated Development Environment	Revision Preparation for Summer Exams	

	compare them for efficiency and ease.					
Skills	<u>1.4 Network Security</u> Students will build an understanding of: - Malware - Social Engineering - Brute Force - DDOS - SQL - Prevention Methods They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.1 Algorithms</u> Students will be able to write and interpret algorithms. This could be in the form of pseudocode or flowcharts They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	<u>1.4 Network Security</u> Students will build an understanding of: - Malware - Social Engineering - Brute Force - DDOS - SQL - Prevention Methods They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.3 Producing robust programs</u> Students will be improving knowledge on the following topics: - Anticipating Misuse - Authentication - Maintainability - Iterative testing - Selecting test data They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	<u>1.5 System Software</u> Students will be able to explain the functionality of OS. Such as: - user interface - file management - Peripheral management - Memory Students will be able to identify and explain the use of utilities software, such as: - Encryption - Defragmentation - Data Compression They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.4 Boolean Logic</u> Students will be able to answer the conclusions of logic gates, including: - AND - OR	<u>1.5 System Software</u> Students will be able to explain the functionality of OS. Such as: - user interface - file management - Peripheral management - Memory Students will be able to identify and explain the use of utilities software, such as: - Encryption - Defragmentation - Data Compression They will also be able to use the knowledge from this unit to answer questions in the Component 1 paper. <u>2.5 Programming languages and IDE</u> Students will be able to explain the difference between high and low level languages. They will be able to describe the use of translators, compilers and interpreters.	Exam Technique	

			- NOT - Truth Tables They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.	They will also be able to use the knowledge from this unit to answer questions in the Component 2 paper.		
Key vocabulary	Malicious code/ misconfigured/ access rights/ unpatched/ penetration test/ white box/black box/blagging/ phishing/pharming/ shouldering/ pseudocode/ flowcharts/ algorithms/ data flow	Malicious code, misconfigured access rights, unpatched, penetration test, white box, black box, blagging, phishing, pharming, shouldering. Authentication/ Normal/ Boundary/ Invalid/ Erroneous/ Indentation Commenting	Compression/Memory/ GUI/Text Based/ Speech/ Device Drivers/ Files/Encryption/ Anti-Virus/ Defragmentation/ System Cleaner AND/NOT/OR/ Truth Tables	Compression/Memory/ GUI/Text Based/ Speech/ Device Drivers/ Files/Encryption/ Anti-Virus/ Defragmentation/ System Cleaner Compiler/Translator/ Interpreter/ High Level/Python/Low Level/ Assembly/ Machine Code	Analyse/ Explain/ Describe/Evaluate/Give/ Discuss	
Assessment	End of topic assessments Low Stakes Quizzing	End of topic assessments Low Stakes Quizzing	End of topic assessments Low Stakes Quizzing	End of topic assessments Low Stakes Quizzing	OCR Final Examination 2x 1 hour 30 minute papers	

Subject	BTEC National IT AAQ		Year		12	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	Unit 3 Website Development	Unit 3 Website Development	Unit 1- Information Technology Systems	Unit 1- Information Technology Systems	Unit 1- Information Technology Systems	Unit 2 Cyber Security
Knowledge	Students will investigate fundamental principles in website development. They will design and develop a website in response to a client brief	Students will investigate fundamental principles in website development. They will design and develop a website in response to a client brief	Students will be able to explain the concepts and implications of the use of, and relationships among, the devices that form IT systems. Including: - Digital Devices - Peripheral Devices - Computer Systems - Emerging Technologies Students will be able to explain the concepts, process and implications of transferring data within and between IT systems. Including: - Connectivity - Networks - Issues to transmission of data	Students will be able to explain the implications for individuals and organisations of using online IT systems. Including: - Online systems - Online Communities Students will be able to explain the issues and implications of storing and transmitting information in digital form. Including: - Threats to data - Protecting Data	Students will be able to explain the uses, issues and implications of IT systems and their impact on individuals and organisations. Including: - Online Services - Impact on organisations - Use and manipulating data Students will be able to explain the concepts, impacts and implications of issues resulting from the use of IT systems. Including: - Moral & Ethical - Legal Issues	Students will study cyber security threats and vulnerabilities, the methods used to protect organisations against threats and managing security incidents

Skills	Students will learn how to plan, design, create, test and evaluate a website.	Students will learn how to plan, design, create, test and	Students learn how to answer short- and long-answer	Students learn how to answer short- and long-answer	Students learn how to answer short- and long-answer	Students will learn how to answer short- and
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	Students will learn new skills in using Adobe Dreamweaver to create a website.	evaluate a website. Students will learn new skills in using Adobe Dreamweaver to create a website.	questions. The questions will assess knowledge and understanding of IT systems and the implications of their use in personal and professional situations.	questions. The questions will assess knowledge and understanding of IT systems and the implications of their use in personal and professional situations.	questions. The questions will assess knowledge and understanding of IT systems and the implications of their use in personal and professional situations.	long-answer questions. Students will explore and relate to contexts and data presented. The questions will assess understanding of cyber security threats, the methods used to counter them and the forensics used to investigate an attack
Key vocabulary	UI/UX/Accessibility/ Navigation/Colour Scheme/Usability /Dreamweaver/HTML/CSS /JavaScript /Images/Testing/Error	UI/UX/Accessibility/ Navigation/Colour Scheme/Usability /Dreamweaver/ HTML/CSS/JavaScript /Images/Testing/Error	QR/CAD/CAM/ Transactional Data/ Targeted Marketing. Collaborative Working/ Data Manipulation/ Environment/ Unequal Access/ Globalisation/Cyber Crime/ Ethics	QR/CAD/CAM/ Transactional Data/ Targeted Marketing. Collaborative Working/ Data Manipulation/ Environment/ Unequal Access/ Globalisation/Cyber Crime/ Ethics	QR/CAD/CAM/ Transactional Data/ Targeted Marketing. Collaborative Working/ Data Manipulation/ Environment/ Unequal Access/ Globalisation/Cyber Crime/ Ethics	Cyber/ threats/ malware/ phishing/ detection/forensic/ security /evidence/ disaster/ hardware/ software
Assessment	15 hour PSA provided by Pearson	15 hour PSA provided by Pearson	2 hour exam assessed by Pearson	2 hour exam assessed by Pearson	2 hour exam assessed by Pearson	2 hour 15 minute exam assessed by Pearson

Subject	BTEC National IT				Year	13
	Term 1	Term 2	Term 3	Term 4	Term 5	Study Leave
Topic/ Specification reference	Unit 2 Cyber Security	Unit 2 Cyber Security	Unit 4 Database Development	Unit 4 Database Development	Unit 4 Database Development	
Knowledge	Students will study cyber security threats and vulnerabilities, the methods used to protect organisations against threats and managing security incidents	Students will study cyber security threats and vulnerabilities, the methods used to protect organisations against threats and managing security incidents	Students will understand the purpose and structure of relational database management systems.	Students will understand the features and characteristics of relational database design techniques and their application to solve problems Students will be able to select and configure appropriate RDBMS and SQL tools to produce a database solution to meet client's requirements	Students will be able to undertake testing of developed databases and evaluate them against the client requirements.	
Skills	Students will learn how to answer short- and long-answer questions. Students will explore and relate to contexts and data presented. The questions will assess understanding of cyber security threats, the methods used to counter them and the forensics used to investigate an attack	Students will learn how to answer short- and long-answer questions. Students will explore and relate to contexts and data presented. The questions will assess understanding of cyber security threats, the methods used to counter them and the forensics used to investigate an attack	Relational DBMS Manipulating Data Normalisation	Producing database solutions including: - creating, setting up and maintaining data tables - creating links, relationships between data table - applying data validation rules - generating outputs – user-generated	Students will learn: - Different types of testing (normal/ erroneous/ extreme) - Referential integrity, functionality, security. - Recording appropriate test documentation. Using testing outcomes to improve and refine a database solution.	

				queries, automated queries, reports - user interface – navigation, data- entry forms, sub- forms - automated functions - Populating the database by importing, adding, manipulating and use of SQL.		
Key vocabulary	Cyber/ threats/ malware/ phishing/ detection/forensic/ security /evidence/ disaster/ hardware/ software	Cyber/ threats/ malware/ phishing/ detection/forensic/ security /evidence/ disaster/ hardware/ software	Validation/ Import/Queries/ Formulas/ Forms/ Reports	Validation/ Import/Queries/ Formulas/ Forms/ Reports	Testing/ Normal/ Erroneous/ Extreme Expected Outcome/ Evaluation/ Requirements/ Interactive/ Constraints/ Fit for purpose	
Assessment	2 hour 15 minute exam assessed by Pearson	2 hour 15 minute exam assessed by Pearson	15 hour PSA provided by Pearson	15 hour PSA provided by Pearson	15 hour PSA provided by Pearson	

Subject	BTEC National Computing AAQ		Year		12	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic/ Specification reference	Unit 3 Human Computer Interaction	Unit 3 Human Computer Interaction	Unit 1 Programming Fundamentals	Unit 1 Programming Fundamentals	Unit 1 Programming Fundamentals	Unit 2 Computer Network Security & Encryption
Knowledge	Students will examine the underlying principles of human-computer interaction (HCI) and develop a HCI solution to meet the requirements of a given brief.	Students will examine the underlying principles of human-computer interaction (HCI) and develop a HCI solution to meet the requirements of a given brief.	Students will explore the core knowledge, skills and understanding that underpin computer programming. The unit will support the development of computational thinking and programming skills, as well as developing an understanding of how these skills are used to solve problems.	Students will explore the core knowledge, skills and understanding that underpin computer programming. The unit will support the development of computational thinking and programming skills, as well as developing an understanding of how these skills are used to solve problems.	Students will explore the core knowledge, skills and understanding that underpin computer programming. The unit will support the development of computational thinking and programming skills, as well as developing an understanding of how these skills are used to solve problems.	Students will explore computer network security and encryption, the methods used to protect against threats and how to use encryption to secure data transmission and storage.
Skills	Understand how the principles of user experience (UX) and user interface (UI) design are used to develop methods of interaction between humans and computers that allow a range of needs to be met. Explore how the user and the purpose of the digital system influence the design	Understand how the principles of user experience (UX) and user interface (UI) design are used to develop methods of interaction between humans and computers that allow a range of needs to be met. Explore how the user and the purpose of the digital system influence the design	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.

	choices for HCI solutions, including how systems can be made so that a range of users with potentially diverse needs can be accommodated. Apply problem-solving skills and your understanding of key principles of HCI design to design and develop a solution to a HCI-based scenario.	choices for HCI solutions, including how systems can be made so that a range of users with potentially diverse needs can be accommodated. Apply problem-solving skills and your understanding of key principles of HCI design to design and develop a solution to a HCI-based scenario.				
Key vocabulary	UX/UI/Usability /Accessibility/User Interface/target users/ Design/Software/ Hardware/Testing/ Review	UX/UI/Usability /Accessibility/User Interface/target users/ Design/Software/ Hardware/Testing/ Review	Binary/number/data /logic/structures /built n functions /text files/ Problem/validation /testing/ code	Binary/number/data /logic/structures /built n functions /text files/ Problem/validation /testing/ code	Binary/number/data /logic/structures /built n functions /text files/ Problem/validation /testing/ code	Network/storage/ Devices/operating system/attacks/threat /data/disaster/ Recovery/encryption
Assessment	15 hour PSA set by Pearson	15 hour PSA set by Pearson	2 hours 30 minute exam assessed by Pearson	2 hours 30 minute exam assessed by Pearson	2 hours 30 minute exam assessed by Pearson	2 hours 15 minute exam assessed by Pearson

Subject	BTEC National Computing AAQ					Year	13
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Study leave
Topic/ Specification reference	Unit 2 Computer Network Security & Encryption	Unit 2 Computer Network Security & Encryption	Unit 4 Practical Programming	Unit 4 Practical Programming	Unit 4 Practical Programming		
Knowledge	Students will explore computer network security and encryption, the methods used to protect against threats and how to use encryption to secure data transmission and storage.	Students will explore computer network security and encryption, the methods used to protect against threats and how to use encryption to secure data transmission and storage.	Students explore the principles of computer science in connection with the concepts of software development. Students use a systematic and methodical approach to manage the development of a software solution to a problem.	Students explore the principles of computer science in connection with the concepts of software development. Students use a systematic and methodical approach to manage the development of a software solution to a problem.	Students explore the principles of computer science in connection with the concepts of software development. Students use a systematic and methodical approach to manage the development of a software solution to a problem.		
Skills	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.	Students will learn how to answer short- and long-answer questions. The questions will assess knowledge and understanding of programming concepts and how they are used to solve problems.	Students will learn how to explore principles of computing related to software development and manage the development of a software solution using Python.	Students will learn how to explore principles of computing related to software development and manage the development of a software solution using Python.	Students will learn how to explore principles of computing related to software development and manage the development of a software solution using Python.		
Key vocabulary	Network/storage/ Devices/operating system/attacks/threat /data/disaster/ Recovery/encryption	Network/storage/ Devices/operating system/attacks/threat /data/disaster/ Recovery/encryption	Problem/Solution/ Data/Input/Output/ Structures/Searching/ Sorting/Python	Problem/Solution/ Data/Input/Output/ Structures/Searching/ Sorting/Python	Problem/Solution/ Data/Input/Output/ Structures/Searching/ Sorting/Python		
Assessment	2 hours 15 minute exam assessed by Pearson	2 hours 15 minute exam assessed by Pearson	15 hour PSA set by Pearson	15 hour PSA set by Pearson	15 hour PSA set by Pearson		