Why Teach BTEC Digital Information Technology?

The digital sector is a major source of employment in the UK. Around 1.46 million people work in digital companies and there are around 45,000 digital jobs advertised at any one time. Digital skills span all industries, and almost all jobs in the UK today require employees to have a good level of digital literacy

The BTEC Award will raise your confidence in using ICT and plug potential gaps in digital skills and knowledge not covered by studying Computer Science. This is a creative and hands-on course that will give you a taste of what the IT sector is like, as well as the skills and confidence needed to succeed in it.

You will produce a practical solution to a digital brief and gain a broad range of valuable skills for a future in the digital industry. It's packed with modern digital content such as UI Design, Cloud Technologies, and Cyber Security for a broad introduction to the digital sector.

You will develop a deeper understanding of the modern digital sector by:

- developing technical skills and techniques
- planning a realistic digital solution for a given brief
- understanding modern concepts such as cloud computing and cyber security
- appreciating the importance of ethics when working with data

Substantive Big Ideas

- Exploring Digital Design Principles
- Project Planning
- Collecting, Presenting and Interpreting Data
- Data Modelling
- Impact of Modern Technology

Disciplinary Big Ideas

- Investigation and Analysis Skills
- Planning and Time Management
- Problem-Solving
- Application of Numeracy
- Presentation Skills and Literacy

Learning for Life and Careers

Employability skills

Literacy, Numeracy/ICT, Research, Analysis, Creativity, Leadership, Organisation, Resilience, Initiative, Communication.

Linking the curriculum to careers

Digital skills span all industries, and almost all jobs in the UK today require employees to have a good level of digital literacy. The UK Tech industry as a whole employs over 2.93 million people and has seen 40% growth between 2017-2019. The modern world expects digital skills to be as important as English and maths. Having both technical skills and business understanding is the key to success.

Examples of qualification pathways

The best option would depend on the individual and their results. You could progress to a Level 2 Technical Certificate or to a Level 3 programme, such as A Levels, a T Level or a BTEC National, either on its own or in combination with A levels.

	Year 10	Year 11
Autumn 1	**Component 1** • User interfaces – text-based, speech, GUI, sensors, menus/forms • Factors effecting choice of IU – performance, storage, hardware, ease-of-use, user requirements and experience • Audience needs – accessibility, skill level, demographics • Design principles – colours, font, language, layout • Designing an efficient user interface	**Component 2** Refresh and Summative Assessment
Autumn 2	**Component 1** • Project planning techniques – Gantt charts, mood boards, mind maps, methodologies • Creating a project proposal and plan – purpose/audience, user requirements, constraints, time scales • Creating an initial design – storyboards, hardware and software requirements, input and output requirements, sketches, storyboards • Prep for Summative Assessment	**Component 3** • Impact of modern technologies – world teams, 24/7/365, flexibility, collaboration and communication tools, scheduling and planning tools, platforms used to communicate with stakeholders, inclusivity and accessibility, positive and negative impacts • Threats to data – why systems are attacked, external and internal threats, impact of security breaches • Prevention and management of threats to data – user access restrictions, data level protection, finding weaknesses • Policy – defining responsibility, security parameters, disaster recovery policy, actions to take after an attack
Spring 1	**Component 1** • Developing a user interface • Review a user interface – strengths and weaknesses, suitability of purpose, ease-of-use, accessibility features • Summative Assessment	**Component 3** • Responsible use of digital systems – shared data (location-based, transaction, cookies) environmental impact (disposal, upgrading, usage policies) • Legal and ethical – equal access to services and information, net neutrality, acceptable use policies, use of social media, data protection principles, use of data on the internet (cookies, transaction data) intellectual property, criminal use of computer systems
Spring 2	**Component 2** • Characteristics of data and information • Representing Information – text, numbers, tables, graphs/charts, sparklines, infographics • Ensuring data is suitable for processing – validation, verification • Data collection – primary data, secondary data, samples, methods • Quality of information – source, accuracy, age, completeness, detail, format, volume • Sectors that use data modelling – transport, education, retail, banking • Threats to data – invasion of privacy, fraud, inaccurate data	**Component 3** • Forms of notation – data flow diagrams, flow charts, system diagrams, tables, written information • Revision
Summer 1	**Component 2** • Data processing methods – formula, basic functions, sorting, advanced manipulation methods (decision making, lookup, logical, subtotal), cell referencing, macros, 3D referencing • Producing a dashboard – show summaries from data, present data (pivot tables, graphs, form controls), presentation features (merging, formatting, conditional formatting) • Prep for Summative Assessment	**Component 3** Revision and External assessment
Summer 2	**Component 2** • Drawing conclusions based on findings – trends, patterns errors • How Presentation affects understanding – misinterpretations, bias, inaccurate conclusions **Component 3** • Modern technologies – ad hoc networks, cloud storage and computing, selecting platforms, implications of cloud technology	

Prince William School
Digital IT Substantive Knowledge Progression

	Year 10	Year 11
Exploring digital design principles	• Understand the use of different types of user interfaces and their impact on design. • Understand how the varying needs of different audiences will affect both the type and design of an interface. • Understand the different design principles and how, when applied, they provide both appropriate and effective user interaction. • Design and create an efficient user interface using design principles	
Project planning	• Understand how the use of different planning tools and design methodologies can be used to plan, monitor and execute projects. • Create a project proposal for a given brief taking into consideration audience, purpose, customer requirements and constraints. • Create a project plan that considers the overall timescale of the project and breaks down the main tasks into manageable sub-tasks	
Collecting, Presenting and Interpreting Data	• Understand how data is collected by organisations and its impact on individuals. • Understand the different ways of representing information. • Understand the methods that can be used to ensure data is suitable. • Understand the different data collection methods, the strengths, and weaknesses of each. • Understand the factors that affect the quality of information. • Understand the different threats that face individual who have data stored about them.	• Create an account how data is collected and used by organisations and its impact on individuals
Data Modelling	• Understand how to import a set of data from an external source. • Understand how to apply data processing methods to aid decision making. • Understand how to produce a dashboard that displays information summarises based on a given sample data set. • Understand how to draw conclusions based on findings in the data. • Understand how to create an investigation on presentation methods (to ensure that they don't lead to misinterpretations, bias and inaccurate conclusions).	• Import live data from an external source. • Apply data processing methods to aid decision making. • Produce a dashboard that displays information summarises based on a given (live) data set. • Draw conclusions based on findings in the data. • Create an evaluation that investigates how well the presentation methods have been used
Impact of Modern Technology	• Understand how and why modern technologies are used by organisations. • Understand the impact of modern technologies. How they are used to manage modern teams and communicate. The positive and negative impacts on individuals and organisations	• Understand the nature of threats to digital systems and ways that they can be mitigated through organisation policy, procedures, and the actions of individuals. • 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 • Understand how to interpret and use standard conventions to combine diagrammatical and written information to express an understanding of concepts

	Year 10	Year 11
Investigation and Analysis Skills	• Create an account of how data is collected and used by organisations and its impact on individuals. • Apply data processing methods to aid decision making.	• Draw conclusions based on findings in the data. • Create an evaluation that investigates how well the presentation methods have been used
Presentation Skills and Literacy	• Design and create an efficient user interface using design principles.	• Produce a dashboard that displays information summarises based on a given (live) data set
Problem-Solving	• Import a sample set of data • Apply data processing methods • Produce a dashboard. • Draw conclusions	• Import live data from an external source • Apply data processing methods to aid decision making. • Produce a dashboard that displays information summarises based on a given (live) data set. • Draw conclusions based on findings in the data.
Planning and Time Management	• Create a project plan that considers the overall timescale of the project and breaks down the main tasks into manageable sub-tasks	
Application of Numeracy	• Apply data processing methods - formula, basic functions, sorting, advanced manipulation methods (decision making, lookup, logical, subtotal), cell referencing, macros, 3D referencing	• Apply data processing methods to a live scenario

Year 10	Year 11

Autumn 1

Interface	Software	Intuitive
Demographics	Performance	Skill Level
Accessibility	Design principles	User Requirements
Layout		Hardware

Autumn 2

Year 10

Iterative methodology	Constraints
Waterfall methodology	Risks
Gantt chart	Output requirements
Task dependencies	Input requirements
Purpose	Milestone

Year 11

World Teams	User access restriction	Encryption
Inclusivity	Firewall	Biometrics
Collaboration tools	Device hardening	Two-factor authentication
Communication platforms	Ethical hacking	Disaster recovery policy
Remote working	Penetrations testing	Man-in-the-middle attacks
Malware	Social engineering	
Security breach		

Spring 1

Year 10

Mind Map	Refining
Mood board	Ease of Use
Storyboard	Test strategy
Target audience	Review
Navigation	

Year 11

Shared data	Intellectual property	Social media
Environmental impact	Copyright	Data Protection Act
Recycling	Trademarks	
Upgrading	Patents	
Net neutrality	Cookies	
Acceptable Use Policy	Transactional data	

Spring 2

Year 10

Data	Format	Verification
Information	Volume	Sample
Validation	Sector	Accuracy
	Privacy	

Year 11

Data flow diagrams	Tables
Flowcharts	Information flow diagrams
System diagrams	Notation

Summer 1

Year 10

Importing	String	Sort	Absolute referencing
Formulae	Lookup	Logical Operator	Relative referencing
Function	Filter	Macro	

Summer 2

Year 10

Pivot charts	Adhoc networks	Scalability
Graphs	Tethering	Cloud Computing
Charts	Open Wi-fi	Platforms
Percentages	Personal Hotspot	Redundancy
Trends	Cloud storage	Recommendations
Patterns	Synchronisation	Conditional formatting
Anomalies	Bias	