Pearson BTEC

Pearson BTEC
Tech Award Level 1/2 in

Digital Information Technology

First teaching from **September 2022**

L1/2

Specification

Qualification No: 603/7050/6 *First teaching from September 2022*

Issue 5

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This specification is Issue 5. We will inform centres of any changes to this issue. The latest issue can be found on our website.

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Pearson BTEC Tech Awards – introduction

About the BTEC Tech Award suite

Tech Awards have been developed by Pearson to give learners at Key Stage 4 in England, Northern Ireland and Wales the opportunity to study one or more vocational areas as part of their curriculum. We have developed the qualifications in consultation with secondary school and further education representatives, and subject specialists to ensure that they engage and prepare learners for either academic or vocational progression post-16.

As part of a Key Stage 4 programme, learners will be studying a broad range of GCSEs, including English, mathematics and science. The BTEC Tech Award suite has been designed to allow learners to draw on the knowledge and skills acquired from these subjects where relevant. When studying for a 'BTEC', learners can use the knowledge and skills from GCSEs, giving them the opportunity to apply their academic knowledge to everyday and work contexts.

The BTEC Tech Award suite is an introduction to vocational learning. The qualifications give learners the opportunity to build applied knowledge and skills that show an aptitude for further learning, both in the sector and more widely. The approach to the suite is based on well-established BTEC assessment approaches that are proven to be successful in building applied knowledge and skills and motivating learners to engage fully with challenging study. There are many progression options as the skills acquired are applicable to a range of post-16 study options.

The BTEC Tech Award suite differs from other BTECs designed to be taken post-16 as the qualifications offer a basis for further study, rather than meeting all the vocational requirements that learners need to progress directly to a job role in a defined occupational area. The focus is on building applied knowledge and skills to show aptitude and improving understanding of progression options so that learners who achieve one or more of the qualifications are equipped to go on to become work ready for an occupation post-16.

About recognition as Department for Education technical awards

The BTEC Tech Award suite has been designed to meet the Department for Education (DfE) requirements for qualifications to be offered as technical awards for 14–16-year-olds.

The DfE has set out characteristics for technical awards through which vocational qualifications can be recognised as part of performance measures in the open category of Progress 8. To be recognised as technical awards, it is expected that qualifications will focus on developing sector-specific applied knowledge and skills through realistic vocational contexts. It is also expected that the qualifications form part of a Key Stage 4 learning programme that enables both academic and vocational progression.

About the digital sector

The digital sector is a major source of employment in the UK. Despite a turbulent economy in 2020 the Digital sector in the UK advertised 90,000 jobs per week during. 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 UK has positioned itself to be the 'Digital capital of Europe' as it continues to invest billions every year in digital skills and commerce. 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.

Summary of Pearson BTEC Level 1/Level 2 Tech Award in Digital Information Technology Specification Issue 5 changes

Summary of changes made between the previous issue and this current issue	**Page number**
Guidance regarding external assessment resits and certification has been clarified	Page 6
We have amended the release dates for the Pearson-set assignments.	Page 15, 28
Section 7: Timing of the External Assessment, amendments regarding external assessment resits and certification repeated from Page 6	Page 55
Section 8: Eligibility for an award, guidance on eligibility for an award has been clarified. Statement relating to U grade has been moved to the *Calculation of the Qualification Grade* section for easier reference.	Page 57, 58

Contents

1 Pearson BTEC Level 1/Level 2 Tech Award in Digital Information Technology – purpose

Who is the qualification for?

The Pearson BTEC Level 1/Level 2 Tech Award in Digital Information Technology (603/7050/6) is for learners who want to acquire sector-specific applied knowledge and skills through vocational contexts by studying project planning, data management, data interpretation, data presentation and data protection as part of their Key Stage 4 learning. The qualification recognises the value of learning skills, knowledge and vocational attributes to complement GCSEs. The qualification will broaden learners' experience and understanding of the varied progression options available to them.

What does the qualification cover?

The Tech Award gives learners the opportunity to develop sector-specific applied knowledge and skills through realistic vocational contexts. The main focus is on four areas of equal importance, which cover the:

- development of key skills that prove your aptitude in digital information technology, such as project planning, designing and creating user interfaces and dashboards as a way to present and interpret data
- process that underpins effective ways of working in digital information technology, such as project planning, the iterative design process, cyber security, virtual teams, legal and ethical codes of conduct
- attitudes that are considered most important in digital information technology, including personal management and communication
- knowledge that underpins effective use of skills, process and attitudes in the sector such as how different user interfaces meet user needs, how organisations collect and use data to make decisions, virtual workplaces, cyber security and legal and ethical issues.

This Tech Award complements the learning in GCSE programmes such as GCSE Computer Science. It is an introduction to the application of project planning techniques to plan, design and develop a user interface, how to collect, present and interpret data and the use of digital systems.

What can the qualification lead to?

Study of the qualification as part of Key Stage 4 learning will help learners to make more informed choices for further learning, either generally or in this sector. The choices that learners can make post-16 will depend on their overall level of attainment and their performance in the qualification.

Learners who generally achieve at Level 2 across their Key Stage 4 learning might consider progression to:

- A Levels as preparation for entry to higher education in a range of subjects
- study of a vocational qualification at Level 3, such as a BTEC National in IT, which prepares learners to enter employment or apprenticeships, or to move on to higher education by studying a degree in the digital sector.

Learners who generally achieve at Level 1 across their Key Stage 4 learning might consider progression to:

- study at Level 2 post-16 in a range of technical routes designed to lead to work, employment, apprenticeships or further study at Level 3. The attitudes and the reflective and communication skills covered in this qualification will help these learners
- study of IT Support or Digital Technology through a Technical Certificate. Learners who perform strongly in this qualification compared to their overall performance should strongly consider this progression route as it can lead ultimately to employment in the digital sector.

2 Structure

Total Qualification Time

For all regulated qualifications, Pearson specifies a total number of hours that it is estimated learners will require to complete and show achievement for the qualification: this is the Total Qualification Time (TQT). Within the TQT, Pearson identifies the number of Guided Learning Hours (GLH) that we estimate a centre delivering the qualification might provide. Guided learning means activities such as lessons, tutorials, online instruction, supervised study and giving feedback on performance that directly involve teachers and assessors in teaching, supervising and invigilating learners. Guided learning includes the time required for learners to complete external assessment under examination or supervised conditions.

In addition to guided learning, other required learning directed by teachers or assessors will include private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

The Pearson BTEC Level 1/Level 2 Tech Award in Digital Information Technology has:

- Total Qualification Time: 150 hours
- Guided Learning Hours: 120 hours.

Centres should take note of these hours in planning their programme but should also use their professional judgement to determine the provision of guided learning and study time across the components.

Components

Learners are required to complete and achieve all three components in the qualification.

Pearson BTEC Level 1/Level 2 Tech Award in Digital Information Technology				
Component number	**Component title**	**GLH**	**Level**	**How assessed**
1	Exploring User Interface Design Principles and Project Planning Techniques	**36**	**1/2**	Internal
2	Collecting, Presenting and Interpreting Data	**36**	**1/2**	Internal
3	Effective Digital Working Practices	**48**	**1/2**	External Synoptic

The three components focus on the assessment of knowledge, skills and practices. These are all essential to developing a basis for progression and therefore learners need to achieve all components in order to achieve the qualification.

The components are interrelated and they are best seen as part of an integrated whole rather than as totally distinct study areas. Learners will normally take this qualification over a two-year period or longer. This means that they must be given the opportunity to build their confidence in understanding the sector, vocational contexts and vocational attributes over a long period during the course of study before they are assessed. As the interrelated components are not linked to occupational roles, certification is not available at component level.

Assessment

The three components in the qualification give learners the opportunity to develop broad knowledge and understanding of the digital sector, and specialist skills and techniques such as project planning, designing user interfaces and manipulating and interpreting data at Levels 1 and 2.

Internal assessment – externally moderated

Components 1 and 2 are assessed through non-exam internal assessment. The non-exam internal assessment for these components has been designed to demonstrate application of the conceptual knowledge underpinning the sector through realistic tasks and activities. This style of assessment promotes deep learning through ensuring the connection between knowledge and practice. The components focus on:

- the development of core knowledge and understanding of different types of user interfaces, how user interface design principles are used to meet the needs of different users, and how organisations collect, manipulate and interpret data to draw conclusions and make decisions
- the development and application of skills such as project planning, iterative design of a user interface, using data manipulation tools to create a dashboard, interpreting and drawing conclusions from data
- reflective practice through the development of skills and techniques that allow learners to respond to feedback and to identify areas for improvement.

Non-exam internal assessment is delivered through Pearson-set Assignments. These assignments are set by Pearson, marked by the centre and moderated by Pearson.

For each component new assignments are released twice a year through the secure area of our website. Each Pearson-set Assignment will be clearly marked with the assessment series and academic year of release; centres must ensure that they are using the current series' assignment to assess their learners. Centres must use these assignments for summative assessments and the assignments must be completed under supervised conditions.

Centres will mark the completed assignments using the descriptors in the marking grid given in each component. Prior to submitting marks for moderation, where a learner has not achieved their expected level of performance for an assignment, the centre may authorise one opportunity for learners to improve evidence and resubmit for internal assessment within 15 working days.

Following submission of marks for moderation, there is no further opportunity to resubmit improved evidence based on the same completed assignment. Learners may be offered a single retake opportunity in a later assessment series using the new Pearson-set Assignment released for that assessment series. Retakes must be completed prior to or in the same series as the externally assessed component to meet terminal assessment requirements. For further information on the design of the assignments, retakes and the approach to marking, see *Section 5: Non-exam internal assessment*.

Component	Description of Pearson-set Assignment	Window for assessment
Component 1: Exploring User Interface Design Principles and Project Planning Techniques	Non-exam internal assessment set by Pearson, marked by the centre and moderated by Pearson. The Pearson-set Assignment will be completed in approximately 6 hours of supervised assessment. 60 marks.	**December/January and May/June from 2023 onwards**
Component 2: Collecting, Presenting and Interpreting Data	Non-exam internal assessment set by Pearson, marked by the centre and moderated by Pearson. The Pearson-set Assignment will be completed in approximately 6 hours of supervised assessment. 60 marks.	**December/January and May/June from 2023 onwards**

External synoptic assessment

There is one external assessment, Component 3, which provides the main synoptic assessment for the qualification. Component 3 builds directly on Components 1 and 2 and enables learning to be brought together and related to a real-life situation.

Component 3: Effective Digital Working Practices requires learners to apply decision-making skills and techniques in line with different organisations' use of digital systems and the wider implications associated with their use.

The design of this external assessment ensures that there is sufficient stretch and challenge, enabling the assessment of knowledge and understanding at the end of the learning period.

The external assessment is based on key tasks that require learners to demonstrate that they can identify and use effectively an appropriate selection of skills, techniques, concepts, theories and knowledge from across the whole qualification in an integrated way.

The external assessment is taken under supervised conditions, which is then marked and a grade awarded by Pearson. Learners are permitted to resit the external assessment once during their programme by taking a new assessment. However, as this is the terminal assessment for the qualification, learners can only use the external assessment results achieved in the same assessment series in which they are requesting certification for the qualification. For the options around certification when learners are resitting, please refer to the Tech Awards section of the Pearson website. The external assessment comprises 40 percent of the total GLH of the qualification and is weighted accordingly in the calculation of the overall qualification grade. Please visit the Tech Awards section of the Pearson website for more information on certification, including certification deadlines.

This component should be delivered and assessed at the end of the course of study.

Component	Description of external assessment	Assessment
Component 3: Effective Digital Working Practices	External assessment set and marked by Pearson, completed under supervised conditions. The assessment will be completed in 1 hour 30 minutes within the period timetabled by Pearson. 60 marks.	**January/ February and May/June from 2024 onwards**

Language of assessment

Assessment of the internal and external components for these qualifications will be available in English. All learner work must be in English. A learner taking the qualifications may be assessed in British Sign Language where it is permitted for the purpose of reasonable adjustment. For information on reasonable adjustments see *Section 9: Administrative arrangements.*

Grading of the qualification

This qualification has a grading scale that fully encompasses achievement at Levels 1 and 2 of the Regulated Qualifications Framework. This enables learners of all abilities to receive appropriate recognition of their achievement and will motivate them to improve and progress during their period of learning and formative assessment. This grading scale also gives clearer information for progression providers on the capability of learners to succeed in post-16 study programmes.

Non-exam internally-assessed components are assessed using a mark-based scale. Centres report marks which will be submitted for moderation. The externally-assessed component is marked externally by Pearson.

All components are awarded on a six-point grade scale from Level 1 Pass to Level 2 Distinction. Learners will receive a Uniform Mark for each component.

The qualification is graded over seven grades from Level 1 Pass to Level 2 Distinction*. The overall grade is a direct aggregation of performance across individual components, with each component weighted according to GLH. Please see *Section 8: Final grading and awarding* for more information on the approach we are using to grade qualifications.

3 Components

Understanding your components

The components in this specification set out details of all the knowledge and skills a learner must acquire and the assessment requirements that will support you in preparing your learners.

The components help you to undertake assessment and quality assurance effectively.

The tables here explain the key terms used for the internal and external components. It is important that all teachers, assessors, Programme Leads and other staff responsible for the delivery and quality assurance of the programme read and digest this section.

Internal assessment – externally moderated

Section	Explanation
Component in brief	This is a brief description of the content of the component. It can be used in summary documents, brochures, etc.
Component introduction	This is designed with learners in mind. It indicates why the component is important and how learning is structured. It might be applied when progressing to further study.
Learning outcomes	These define the scope of the knowledge and skills that a learner will acquire in the component.
Teaching content	This states the knowledge and skills that must be taught. All content is mandatory. Centres should ensure that delivery of content is kept up to date. Some of the components within the specification may contain references to legislation, policies, regulations and organisations, which may not be applicable in the country you deliver this qualification in (if teaching outside of England), or which may have gone out-of-date during the lifespan of the specification. In these instances, it is possible to substitute such references with ones that are current and applicable in the country you deliver.
Suggestions for delivery	This gives you guidance on how you may choose to approach delivery of the components in the qualification.
Component assignment	This gives a description of the assignment for the component and how it should be delivered.

Section	Explanation
Component marking grid	The marking grid details the descriptors across the four mark bands that teachers/assessors will use to determine the marks to be awarded to learners' assignment evidence.
Resource requirements	This section lists any specific resources that you need to be able to teach and assess. For information on support resources see *Section 10: Resources and support*.

Externally-assessed components

Section	Explanation
Component in brief	This is a brief description of the content of the component. It can be used in summary documents, brochures, etc.
Component introduction	This is designed with learners in mind. It indicates why the component is important and how learning is structured. It might be applied when progressing to further study.
Summary of assessment	This sets out the type of external assessment used and the way it is used to assess achievement.
Assessment objectives	These show the hierarchy of knowledge, understanding, skills and behaviours assessed.
Essential content	This gives the content that must be taught for the external assessment. Content will be sampled through the external assessment over time.

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Component 1: Exploring User Interface Design Principles and Project Planning Techniques

Levels: 1/2

Assessment type: Internal, externally moderated

Guided learning hours: 36

Component in brief

Learners will develop their understanding of what makes an effective user interface and how to effectively manage a project. They will use this understanding to plan, design and create a user interface.

Introduction

As digital technologies and organisations continue to evolve, each new development offers new and exciting ways of completing tasks and interacting with our hardware devices and opens a new project with a new set of user requirements that needs to be solved. User interfaces allow individuals and individuals in organisations to interact with digital technologies. The design of the user interface is crucial in ensuring that users can interact positively with their hardware devices.

In this component, you will learn different project planning techniques that can be used to plan and deliver a project that meets a set of user requirements. You will learn the different design principles that can be used to design effective user interfaces and apply appropriate project planning techniques to create a user interface that meets user requirements.

This component will support you in progressing to a Level 2 or Level 3 qualification in the digital sector. You will develop transferable skills such as project planning skills, which will support your progression to Level 2 or Level 3 vocational or academic qualifications.

Learning outcomes

A Understand interface design for individuals and organisations

B Be able to use project planning techniques to plan, design and develop a user interface

C Be able to review a user interface.

Teaching content

Learning outcome A: Understand interface design for individuals and organisations

A1 User interfaces

Learners will understand the use of different types of user interface and how they vary across different uses, devices and purposes.

- Types of user interface:
  - text based
  - speech/natural language
  - graphical user interface (GUI)/windows, icons, menus, pointer (WIMP)
  - sensors
  - menu/forms.
- Range of uses and devices, to include:
  - computers
  - handheld devices to include smartphones, tablets, laptops, e-readers
  - entertainment systems to include games console, home theatre system
  - domestic appliances to include air conditioners, dishwashers, tumble dryers, freezers, washing machines, microwave ovens
  - controlling devices to include security lights, central heating controllers
  - embedded systems to include electronic parking meters, traffic lights, vending machines, smartwatches/digital wristwatches, robotic vacuum cleaners.
- Factors affecting the choice of user interface:
  - performance/response time
  - ease of use
  - user requirements
  - user experience
  - accessibility
  - storage space.
- Hardware and software influences:
  - operating systems/platforms
  - types/size of screen, to include touchscreen, traditional displays
  - types of user input, to include keyboard, mouse, voice, gestures
  - hardware resources available, to include processing power, memory
  - emerging technologies, to include new innovations of input techniques.

A2 Audience needs

Learners will understand the varying needs of the audience and how they affect both the type and the design of the interface.

- Accessibility needs:
  - visual
  - hearing
  - speech
  - motor
  - cognitive.

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- Skill level:
  - expert
  - regular
  - occasional
  - novice.
- Demographics:
  - age
  - beliefs/values
  - culture
  - past experiences.

A3 Design principles

Learners will understand how design principles provide both appropriate and effective user interaction with hardware devices.

- Colours:
  - use of a limited range of colours
  - use of organisational house style
  - ensuring that colours do not clash
  - use of textures, to include glossy, corporate textures in colours, warm, fabric-style textures.
- Font style/size:
  - ensuring text style/size is readable
  - use of sans serif fonts for screen reading
  - avoiding decorative fonts.
- Language:
  - using appropriate language for user needs, to include age-appropriate language
  - using language that is appropriate for user skill level.
- Amount of information:
  - providing appropriate amount of information for the task
  - making appropriate use of white space.
- Layout:
  - consistency throughout the whole interface
  - keeping the layout as close as possible to user expectations
  - placing important items in prominent positions
  - grouping related tasks together
  - use of navigational components to include search fields, breadcrumbs, icons
  - use of input controls, to include dropdown lists, tick boxes, toggles.
- User perception of:
  - colour, to include green to indicate go/successful interactions, orange to indicate warnings, red to indicate stop/errors
  - sound, to include positive high-pitched sounds, negative low-pitched sounds
  - symbols, to include green ticks, red crosses
  - visuals, to include photographs, symbols, graphics.

- Retaining user attention:
  - grabbing attention, to include pop-up messages, flashing graphics, sound, animation
  - ensuring the screen is uncluttered
  - clearly labelled items/features
  - use of predetermined/default values for common user inputs
  - use of autofill to reduce the amount of data entry needed, to include postcodes
  - use of tip text to provide help if the user is unsure what buttons/tools do.
- Intuitive design:
  - use graphics to denote what buttons do
  - helpful pop-up messages
  - easy-to-use help features
  - ensuring consistency
  - easy reversal of actions.

A4 Designing an efficient user interface

Learners will understand the techniques that can be used to improve both the speed and access to user interfaces.

- Use of keyboard shortcuts
- Informative feedback
- Easy reversal of actions
- Ensuring buttons/links are distinguishable
- Using bigger objects to influence selection and reduce selection time
- Making objects stand out to reduce focus time
- Placing related objects next to each other to reduce selection time.

Learning outcome B: Be able to use project planning techniques to plan, design and develop a user interface

B1 Project planning techniques

Learners will understand the use of different planning tools and design methodologies that can be used to plan, monitor and execute projects.

- Planning tools:
  - task lists
  - written or graphical descriptions
  - Gantt charts
  - mood boards
  - mindmaps.
- Methodologies:
  - waterfall
  - agile
  - scrum.

B2 Creating a project proposal and plan

Learners will understand project planning techniques used to develop a project proposal and project plan for the development of a user interface for a given brief.

Project proposal:

- Purpose and audience.
- Project requirements:
  - user requirements
  - output requirements, to include visual, audio, haptic
  - input requirements, to include mouse, keyboard, voice, touch.
- User accessibility requirements.
- Constraints:
  - time
  - resources
  - task dependencies
  - security.

Project plan:

- Timescales:
  - overall timescale
  - when tasks will be completed, including sub-tasks
  - key milestones.

B3 Creating an initial design

Learners will understand how to produce an initial design using design principles.

- Producing a design that meets:
  - the user requirements, including input and output requirements
  - user accessibility needs.
- Producing a design specification that includes:
  - visualisation, to include storyboards, sketches
  - hardware requirements
  - software requirements.
- Producing a design that allows for:
  - increased user confidence/familiarity
  - reduced learning time of new interfaces/features
  - reduced time to complete tasks
  - increased user attention
  - reduced need for specialised knowledge.

B4 Developing a user interface

Learners will understand how to use their design to produce a user interface.

- Initial design using the design principles listed in A3 Design principles.

Learning outcome C: Be able to review a user interface

C1 Review

Learners will understand how to review the success of the user interface and the use of their chosen project planning techniques.

- Strengths and weaknesses of the user interface, to include:
  - how well the user requirements have been met
  - suitability for purpose and audience
  - ease of use
  - accessibility features
  - how effectively the design principles have been met.
- Suggest improvements that could be made to the user interface to better meet the audience needs.

Suggestions for delivery

Successful delivery of this component will allow learners to develop their knowledge and understanding of what makes an effective user interface and how to effectively manage a project. They will use this understanding to plan, design and create a user interface.

You may choose to deliver this component alongside Component 2.

Assignments

Pearson sets the assignments for the assessment of this component.

The assignment for this component consists of four tasks.

- In response to Task 1, learners will complete a project proposal template using a project proposal brief, taking into consideration the purpose and audience, project requirements, user accessibility needs and any constraints. They will use software to create a project plan using project planning and design methodologies and taking into consideration the project proposal brief and overall timescales for the project.
- In response to Task 2, learners will design an initial user interface for four screens of a user interface that meets user requirements and user accessibility needs and other specific hardware and software needs and design considerations.
- In response to Task 3, learners will use their initial design to develop a working prototype of the four screens of the user interface that meets user requirements and user accessibility needs.
- In response to Task 4, learners will review their user interface and project planning techniques. Their review will be against the following criteria – user requirements, ease of use, design principles and accessibility features. In addition, learners will suggest improvements to better meet audience needs.

The assignment will take approximately 6 supervised hours to complete.

The assignments will be marked by centres and moderated by Pearson. Assignments for this component will be made available in June and September of each year through the secure area of the website. Learners must use the Pearson-set Assignment to provide the required evidence to achieve this component.

A sample assignment is provided on the website.

Assessing the assignment

You will make assessment decisions for each assignment using the marking grid given below. Before making assessment decisions, you should refer to the guidance on using the marking grid provided in *Section 5: Non-exam internal assessment*. A glossary of terms used in the marking grids is provided in *Appendix 1*.

For further information on using and assessing through assignments, see *Section 5: Non-exam internal assessment*.

Marking grid

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1a: Project proposal **Learning outcome A: Understand interface design for individuals and organisations** **Learning outcome B: Be able to use project planning techniques to plan, design and develop a user interface**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of relevant project proposal methods. Evidenced through: · **superficial** consideration of the project requirements with **little** reference to the project brief · **superficial** consideration of the user requirements with **little** reference to the project brief · **superficial** consideration of the constraints with **little** reference to the project brief.	**Adequate** application of relevant project proposal methods. Evidenced through: · **partially** appropriate consideration of the project requirements with **partially** accurate reference to the project brief · **partially** appropriate consideration of the user requirements with **partially** accurate reference to the project brief · **partially** appropriate consideration of the constraints with **partially** accurate reference to the project brief.	**Good** application of relevant project proposal methods. Evidenced through: · **mostly** appropriate consideration of the project requirements with **mostly** accurate reference to the project brief · **mostly** appropriate consideration of the user requirements with **mostly** accurate reference to the project brief · **mostly** appropriate consideration of the constraints with **mostly** accurate reference to the project brief.	**Comprehensive** application of relevant project proposal methods. Evidenced through: · **fully** appropriate consideration of the project requirements with **fully** accurate reference to the project brief · **fully** appropriate consideration of the user requirements with **fully** accurate reference to the project brief · **fully** appropriate consideration of the constraints with **fully** accurate reference to the project brief.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1b: Planning timescales **Learning outcome A: Understand interface design for individuals and organisations** **Learning outcome B: Be able to use project planning techniques to plan, design and develop a user interface**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of project planning tools to plan the timeline of the project. Evidenced through: · **superficial** consideration of timescales, including tasks and sub-tasks with **little** reference to the project brief · **superficial** consideration of key milestones with **little** reference to the appropriateness of the project brief · **superficial** consideration of task dependencies with **little** reference to the project brief.	**Adequate** application of project planning tools to plan the timeline of the project. Evidenced through: · **partially** appropriate consideration to timescale, including tasks and sub-tasks with **partially** accurate reference to the project brief · **partially** appropriate consideration of key milestones with **partially** relevant reference to realistic timings · **partially** appropriate consideration of task dependencies with **partially** accurate reference to the project brief.	**Good** application of project planning tools to plan the timeline of the project. Evidenced through: · **mostly** appropriate consideration of timescales, including tasks and sub-tasks with **mostly** accurate reference to the project brief · **mostly** appropriate consideration of key milestones with **mostly** relevant reference to realistic timings · **mostly** appropriate consideration of task dependencies with **mostly** accurate reference to the project brief.	**Comprehensive** application of project planning tools to plan the timeline of the project. Evidenced through: · **fully** appropriate consideration of timescales, including tasks and sub-tasks with **fully** accurate reference to the project brief · **fully** appropriate consideration of key milestones with **fully** relevant reference to realistic timings · **fully** appropriate consideration of task dependencies with **fully** accurate reference to the project brief.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 2: Interface designs **Learning outcome A: Understand interface design for individuals and organisations** **Learning outcome B: Be able to use project planning techniques to plan, design and develop a user interface**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of relevant user interface design methods and design principles. Evidenced through: · **basic** initial designs that meet **few** user requirements · **superficial** consideration of user accessibility features with **little** reference to the project brief · **superficial** consideration of design visualisation including input or output screens with **little** reference to the project brief.	**Adequate** application of relevant user interface design methods and design principles. Evidenced through: · **partially** developed initial designs that meet **some** user requirements · **partially** appropriate consideration of user accessibility features with **partially** accurate reference to the project brief · **partially** appropriate consideration of design visualisation including input or output screens with **partially** accurate reference to the project brief.	**Good** application of relevant user interface design methods and design principles. Evidenced through: · **mostly** developed initial designs that meet **most** user requirements · **mostly** appropriate consideration of user accessibility features with **mostly** accurate reference to the project brief · **mostly** appropriate consideration of design visualisation including input or output screens with **mostly** accurate reference to the project brief.	**Comprehensive** application of relevant user interface design methods and design principles. Evidenced through: · **well-**developed initial designs that **fully** meet **all** user requirements · **fully** appropriate consideration of user accessibility features with **fully** accurate reference to the project brief · **fully** appropriate consideration of design visualisation including input or output screens with **fully** accurate reference to the project brief.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 3: Prototype user interface **Learning outcome A: Understand interface design for individuals and organisations** **Learning outcome B: Be able to use project planning techniques to plan, design and develop a user interface**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of user interface development methods. Evidenced through: · **basic** use of design principles with **little** use of layout, whitespace and consistency · **basic** use of navigation methods with **little** reference to the project brief · **superficial** consideration of user experience and accessible needs with **little** reference to the project brief.	**Adequate** application of user interface development methods. Evidenced through: · **partially** appropriate use of design principles with **partially** effective use of layout, whitespace and consistency · **partially** appropriate use of navigation methods with **partially** accurate reference to the project brief · **partially** appropriate consideration of user experience and accessible needs with **partially** accurate reference to the project brief.	**Good** application of user interface development methods. Evidenced through: · **mostly** appropriate use of design principles with **mostly** effective use of layout, whitespace and consistency · **mostly** appropriate use of navigation methods with **mostly** accurate reference to the project brief · **mostly** appropriate consideration of user experience and accessible needs with **mostly** accurate reference to the project brief.	**Comprehensive** application of user interface development methods. Evidenced through: · **fully** appropriate use of design principles with **fully** effective use of layout, whitespace and consistency · **fully** appropriate use of navigation methods with **fully** accurate reference to the project brief · **fully** appropriate consideration of user experience and accessible needs with **fully** accurate reference to the project brief.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 4: Review user interface **Learning outcome C: Be able to review a user interface**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** justified review of the user interface. Evidenced through: · **superficial** lines of reasoning on how the user interface meets user requirements and ease of use · **superficial** lines of reasoning on the use of design principles and accessibility features · **narrow** range of **superficial** improvements to the user interface that could be developed to better meet audience needs.	**Adequate** justified review of the user interface. Evidenced through: · **partially developed** and **generally** appropriate lines of reasoning on how the user interface meets user requirements and ease of use · **partially developed** and **generally** appropriate lines of reasoning on the use of design principles and accessibility features · **reasonable** range of **partially** appropriate improvements to the user interface that could be developed to better meet audience needs.	**Good** justified review of the user interface. Evidenced through: · **mostly developed** and **largely** appropriate lines of reasoning on how the user interface meets user requirements and ease of use · **mostly well-developed** and **largely** appropriate line of reasoning on the use of design principles and accessibility features · **range** of **mostly** appropriate improvements to the user interface that could be developed to better meet audience needs.	**Comprehensive** justified review of the user interface. Evidenced through: · **well-developed** and **fully** appropriate lines of reasoning on how the user interface meets user requirements and ease of use · **well-developed** and **fully** appropriate lines of reasoning on the use of design principles and accessibility features · **wide** range of **fully** appropriate improvements to the user interface that could be developed to better meet audience needs.

Please refer to *Section 5: Non-exam internal assessment* for further guidance on internal assessment, including how to apply these mark schemes to evidence.

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Resource requirements

For this component, learners must have access to*:*

- appropriate software to create the prototype
- project proposal template (Task 1a)
- resource document (Task 3).

Component 2: Collecting, Presenting and Interpreting Data

Levels: 1/2
Assessment type: Internal, externally moderated
Guided learning hours: 36

Component in brief

Learners will understand the characteristics of data and information and how they help organisations in decision making. They will use data manipulation methods to create a dashboard to present and draw conclusions from information.

Introduction

In order to make decisions, organisations collect vast amounts of data from a range of different sources. They need to use appropriate data-collection methods and ensure that the data is of sufficient quality to enable decision making. Data must then be converted into information to allow it to become useful. Even when data has been converted into information, it will not provide any conclusions on its own. It is up to the data user to be able to look at the information and draw conclusions, so how the information is presented is key to ensuring that effective and accurate decisions are made.

In this component, you will learn the different data manipulation tools that can be used to change the way that data is presented. You will provide clear summaries of the data and present them in a dashboard that will allow organisations to make effective decisions. You will learn the different presentation features that can be used to ensure that information is understood clearly in an objective way so that it is not misinterpreted. You will develop your understanding of how to represent information in different ways to give it more meaning.

This component will support you in progressing to a Level 2 or Level 3 qualification in the digital sector. You will develop transferable skills such as data manipulation skills, which will support your progression to Level 2 or Level 3 vocational or academic qualifications.

Learning outcomes

A Understand how data is collected and used by organisations and its impact on individuals

B Be able to create a dashboard using data manipulation tools

C Be able draw conclusions and review data presentation methods.

Teaching content

Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals

A1 Characteristics of data and information

Learners will understand the concepts of data and that data is meaningless without converting it into information by adding structure and context.

- Characteristics of data:
  - no meaning
  - no structure
  - no context
  - unprocessed.
- Characteristics of information:
  - has meaning
  - has structure
  - has context
  - is processed.

A2 Representing information

Learners will understand the different ways of representing information and will be able to explain situations where they would be used.

- Text
- Numbers
- Tables
- Graphs/charts
- Sparklines
- Infographics.

A3 Ensuring data is suitable for processing

Learners will understand the methods that can be used to ensure data input is suitable and within boundaries so that it is ready to be processed.

- Validation methods:
  - range check
  - type check
  - presence check
  - length check.
- Verification methods:
  - proofreading
  - double entry.

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A4 Data collection

Learners will understand the different types of data collection methods, the strengths and weaknesses of each, how data collection features affect its reliability and how the collection of data could be improved.

- Data collection methods:
  - Primary data
    - interviews
    - questionnaires
    - surveys
  - Secondary data
    - websites
    - books
    - journals
    - blogs
    - forums
    - booking systems
    - company internal documents.
- Data collection features:
  - size of sample
  - who was in the sample
  - where the data was collected
  - when the data was collected
  - methods used.

A5 Quality of information

Learners will understand the factors that affect the quality of information.

- Quality of information factors:
  - source/collection method
  - accuracy
  - age
  - completeness
  - amount of detail
  - format/presentation
  - volume.

A6 Sectors that use data modelling

Learners will understand how different types of data are used by organisations for data modelling.

- Types of sectors, to include:
  - transport
  - education
  - retail
  - banking
  - entertainment

- government
- health care
- construction
- communication
- health and safety
- sport and fitness.

A7 Threats to individuals

Learners will understand the different threats that face individuals who have data stored about them.

- Threats to individuals, to include:
  - invasion of privacy
  - fraud
  - targeting vulnerable groups of people
  - inaccurate data could be stored.

Learning outcome B: Be able to create a dashboard using data manipulation tools

B1 Data processing methods

Learners will understand how data can be imported from an external source. They will then explore how to accurately apply data processing methods to aid decision making. These include:

- data manipulation methods:
  - importing data, to include from other files, the internet
  - formulae, to include add, divide, subtract, multiply
  - functions, to include SUM, AVERAGE, MIN, MAX
  - sorting, to include sorting multiple columns and values.
- advanced manipulation methods:
  - decision-making functions, to include IF, WHATIF, SUMIF
  - lookup functions, to include VLOOKUP, HLOOKUP
  - count functions, to include COUNTBLANK, COUNTIF, COUNTA
  - logical operators, to include NOT, AND, OR
  - outline, to include group, ungroup
  - subtotal to include AVERAGE, SUM, MIN, MAX, COUNT, COUNTA
  - filtering, to include greater than, less than, equals, contains, begins with, ends with, text to columns, to include delimited, fixed width.
- other processing methods:
  - absolute and relative cell referencing, to include use of dollar sign ($) and named cells
  - macros, to include for automatic navigation, change graph options, change data ranges
  - multiple and linking worksheets, to include for dashboard and raw data
  - cell comments
  - alternative views, to include hiding/unhiding cells, freezing planes
  - conditional formatting, to include data bars, colour scales, icon sets.

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B2 Producing a dashboard

Learners will use a dashboard to select and display information summaries based on a given data set.

- Showing data summaries from the data set:
  - totals
  - counts
  - averages
  - percentages
  - sales breakdowns
  - departmental/section breakdown.
- Appropriate presentation methods:
  - tables
  - pivot tables
  - sparklines
  - graphs/charts, including dynamic charts/graphs
  - form controls, to include button, combo box, check box, spin button (spinner), dropdown menu, option button.
- Using appropriate presentation features:
  - font size, style and colour
  - merge cells
  - text wrap
  - cell borders and shading
  - graphics
  - axis labels
  - titles, including overall and section titles
  - conditional formatting.

Learning outcome C: Be able to draw conclusions and review data presentation methods

C1 Drawing conclusions based on findings in the data

Learners will use a dataset and dashboard to present findings and draw conclusions based on their findings.

- Findings, to include:
  - trends
  - patterns
  - possible errors.

C2 How presentation affects understanding

Learners will investigate how well the presentation methods and features listed in B2 have been used, to ensure they do not lead to:

- information being misinterpreted
- information being biased
- inaccurate conclusions being made.

Suggestions for delivery

Successful delivery of this component will allow learners to develop their knowledge and understanding of the characteristics of data and information and how they help organisations in decision making. They will use data manipulation methods to create a dashboard to present and draw conclusions from information.

You may choose to deliver this component alongside Component 1.

Assignments

Pearson sets the assignments for the assessment of this component.

The assignment for this component consists of three tasks.

- In response to Task 1, learners will explore the suitability of two given data collection methods used by an organisation for a given dataset.
- In response to Task 2, learners will carry out different manipulation and processing methods in order to create a dashboard, providing data summaries using appropriate presentation methods and features.
- In response to Task 3, learners will analyse a dataset, present their findings and draw conclusions based on these findings. They will explore how presentation affects understanding in the dataset and how they could be improved.

The assignment will take approximately 6 supervised hours to complete.

The assignment will take approximately 6 supervised hours to complete.

The assignments will be marked by centres and moderated by Pearson. Assignments for this component will be made available in June and then September of each year through the secure area of the website. Learners must use the Pearson-set Assignment to provide the required evidence to achieve this component.

A sample assignment is provided on the website.

Assessing the assignment

You will make assessment decisions for each assignment using the marking grid given below. Before making assessment decisions, you should refer to the guidance on using the marking grid provided in *Section 5: Non-exam internal assessment*. A glossary of terms used in the marking grids is provided in *Appendix 1*.

For further information on using and assessing through assignments, see *Section 5: Non-exam internal assessment*.

Marking grid

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 1: Data collection methods **Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of knowledge and understanding of how data is collected and used by organisations and its impact on individuals. Evidenced through: · a **superficial** account of the impact of the data · **superficial** lines of reasoning with few lines of logic and relation to the context of the scenario · **few** appropriate suggestions to the context of the scenario.	**Adequate** application of knowledge and understanding of how data is collected and used by organisations and its impact on individuals. Evidenced through: · a **partially** developed and partially appropriate account of the impact of the data · lines of reasoning that are **partially** appropriate with some lines of logic and relation to the context of the scenario · **some** appropriate suggestions to the context of the scenario.	**Good** application of knowledge and understanding of how data is collected and used by organisations and its impact on individuals. Evidenced through: · a **mostly** developed and mostly appropriate account of the impact of the data · lines of reasoning that are **mostly** appropriate and **mostly** logical and related to the context of the scenario · **mostly** appropriate suggestions to the context of the scenario.	**Comprehensive** application of knowledge and understanding of how data is collected and used by organisations and its impact on individuals. Evidenced through: · a **well-developed** and fully appropriate account of the impact of the data · lines of reasoning that are **fully** appropriate and logical and related to the context of the scenario · **fully** appropriate suggestions to the context of the scenario.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Tasks 2a and 2b: Use data manipulation methods **Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals** **Learning outcome B: Be able to create a dashboard using data manipulation tools**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of relevant data manipulation and processing methods. Evidenced through: · **basic** use of the required data manipulation and data processing methods · **mostly inaccurate** results produced from the manipulation and processing of data.	**Adequate** application of relevant data manipulation and processing methods. Evidenced through: · **partially** appropriate use of the required data manipulation and data processing methods · **partially accurate** results produced from the manipulation and processing of data.	**Good** application of relevant data manipulation and processing methods. Evidenced through: · **mostly** appropriate use of the required data manipulation, advanced data manipulation and data processing methods · **mostly accurate** results produced from the manipulation and processing of data.	**Comprehensive** application of relevant data manipulation and processing methods. Evidenced through: · **fully** appropriate use of the required data manipulation, advanced data manipulation and data processing methods · **accurate** results produced from the manipulation and processing of data.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 2c: Create a dashboard **Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals** **Learning outcome B: Be able to create a dashboard using data manipulation tools**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of relevant presentation methods and features. Evidenced through: · **superficial** data summaries used showing mostly inaccurate results · **basic** use of a **narrow** range of the presentation methods · **basic** use of a narrow range of presentation features.	**Adequate** application of relevant presentation methods and features. Evidenced through: · **partially** appropriate data summaries used showing partially accurate results · **partially** appropriate use of a **reasonable** range of the presentation methods · **partially** appropriate use of a reasonable range of presentation features.	**Good** application of relevant presentation methods and features. Evidenced through: · **mostly** appropriate data summaries used showing mostly accurate results · **mostly** appropriate use of a **range** of presentation methods · **mostly** appropriate use of a range of the presentation features.	**Comprehensive** application of relevant presentation methods and features. Evidenced through: · **fully** appropriate data summaries used showing accurate results · **fully** appropriate use of a **wide** range of presentation methods · **fully** appropriate use of a **wide** range of presentation features.

Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 3a: Effectiveness of the dashboard **Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals** **Learning outcome C: Be able to draw conclusions and review data presentation methods**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** application of knowledge and understanding to find trends, patterns and errors. Evidenced through: · a **superficial** set of findings provided from the dashboard. **Limited** justification of conclusions drawn. Evidenced through: · conclusions with lines of reasoning that have **little** relevance to the context of the scenario.	**Adequate** application of knowledge and understanding to find trends, patterns and errors. Evidenced through: · a **partially** complete and appropriate set of findings provided from the dashboard. **Adequate** justification of conclusions drawn. Evidenced through: · conclusions with lines of reasoning that are **partially** relevant to the context of the scenario.	**Good** application of knowledge and understanding to find trends, patterns and errors. Evidenced through: · a **mostly** complete and appropriate set of findings provided from the dataset and dashboard. **Good** justification of conclusions drawn. Evidenced through: · conclusions with lines of reasoning that are **mostly** relevant to the context of the scenario.	**Comprehensive** application of knowledge and understanding to find trends, patterns and errors. Evidenced through: · a **fully** complete and appropriate set of findings provided from the dataset and dashboard. **Comprehensive** justification of conclusions drawn. Evidenced through: · conclusions with lines of reasoning that are **fully** relevant to the context of the scenario.

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Mark Band 0	Mark Band 1	Mark Band 2	Mark Band 3	Mark Band 4
Task 3b: How presentation affects understanding **Learning outcome A: Understand how data is collected and used by organisations and its impact on individuals** **Learning outcome C: Be able to draw conclusions and review data presentation methods**				
0 marks	**1 – 3 marks**	**4 – 6 marks**	**7 – 9 marks**	**10 – 12 marks**
No rewardable material	**Limited** justification of the presentation features used to display the summaries and information. Evidenced through: · **simplistic** lines of reasoning on the use of presentation features · **simplistic** lines of reasoning on how the presentation features used affect the understanding of the information provided.	**Adequate** justification of the presentation features used to display the summaries and information. Evidenced through: · **partially** developed lines of reasoning on the use of presentation features · **partially** developed lines of reasoning on how the presentation features used affect the understanding of the information provided.	**Good** justification of the presentation features used to display the summaries and information. Evidenced through: · **mostly well**-developed lines of reasoning on the use of presentation features · **mostly well**-developed lines of reasoning on how the presentation features used affect the understanding of the information provided.	**Comprehensive** justification of the presentation features used to display the summaries and information. Evidenced through: · **well**-developed lines of reasoning on the use of presentation features · **well**-developed lines of reasoning on how the presentation features used affect the understanding of the information provided.

Please refer to *Section 5: Non-exam internal assessment* for further guidance on internal assessment, including how to apply these mark schemes to evidence.

Resource requirements

For this component, learners must have access to*:*

- appropriate data sets.

Component 3: Effective Digital Working Practices

Levels: 1/2
Assessment type: External synoptic
Guided learning hours: 48

Component in brief

Learners will explore how organisations use digital systems and the wider implications associated with their use.

Introduction

Modern organisations are increasingly reliant on the use of digital systems to complete every day, business-critical tasks. The development of these systems has presented organisations with many opportunities to work in new, inventive and flexible ways to achieve their aims. The systems have also brought new challenges and a range of responsibilities.

This component will give you an opportunity to explore how the developments in technology over recent years have enabled modern organisations to communicate and collaborate more effectively than ever before. The component is designed to allow you to explore the digital systems available to organisations and how their features have an impact on the way organisations operate. You will explore how developments in technology have led to more inclusive and flexible working environments, and how regulation and ethical and security concerns influence the way in which organisations operate.

You will analyse information in a range of vocational contexts so that you develop a greater understanding of the use of digital systems by organisations and so that you are able to make reasoned judgements on the systems.

In this component, you will learn about how organisations can use technology safely and about the cyber security issues when working in a digital organisation.

This component will support you in progressing to a Level 2 or Level 3 qualification in the digital sector. The knowledge and skills you develop will give you a basis for further study in a range of subject areas, including computing, IT, engineering, creative and scientific, or you may go on to an apprenticeship or entry-level employment where your understanding of technology will be relevant.

Summary of assessment

This external component builds on knowledge, understanding and skills acquired and developed across the qualification. It requires learners to select and integrate knowledge and understanding synoptically from all components. It is assessed through an external assessment that is set and marked by Pearson. Questions will require learners to apply knowledge and understanding to the given scenarios or context.

An exam worth 60 marks will be completed under supervised conditions. The supervised assessment period is 1 hour and 30 minutes and should be arranged in the period timetabled by Pearson. The assessment availability is January/February and May/June. First assessment is January/February 2024.

Sample assessment materials will be available to help centres prepare learners for assessment.

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Assessment objectives

AO1 Demonstrate knowledge of facts, terms, processes and issues in relation to digital information technology

AO2 Demonstrate an understanding of facts, terms, processes and issues in relation to digital information technology

AO3 Apply an understanding of facts, terms, processes and issues in relation to digital information technology

AO4 Make connections with the concepts, issues, terms and processes in digital information technology

Essential content

A Modern technologies

Learners should learn about how current and modern technologies are used by and have an impact on organisations and their stakeholders. Learners need to know the ways in which organisations and associated individuals use modern technologies to exchange information, communicate, and complete work-related tasks. Learners must be able to apply their knowledge to a range of vocational contexts.

A1 Modern technologies

Understand how and why modern technologies are used by organisations and stakeholders to access and manipulate data, and to provide access to systems and tools in order to complete tasks. Learners should understand the implications of these tools and technologies for organisations and stakeholders.

- Communication technologies:
  - setting up ad hoc networks (open Wi-Fi, tethering/personal hotspot)
  - security issues with open networks
  - performance issues with ad hoc networks
  - issues affecting network availability (rural versus city locations, developed versus developing countries, available infrastructure, mobile network coverage, blackspots).
- Features and uses of cloud storage:
  - setting and sharing of access rights
  - synchronisation of cloud and individual devices
  - availability (24/7)
  - scalability (getting more by renting/freeing to save money).
- Features and uses of cloud computing:
  - online applications
  - consistency of version between users (features, file types)
  - single shared instance of a file
  - collaboration tools/features.
- How the selection of platforms and services impacts on the use of cloud technologies:
  - number and complexity of features
  - paid for versus free
  - interface design (layout, accessibility, mobile versus desktop)
  - available devices.
- How cloud and 'traditional' systems are used together:
  - device synchronisation
  - online/offline working
  - notifications.
- Implications for organisations when choosing cloud technologies:
  - consideration of disaster recovery policies (service provider's, organisation's)
  - security of data (location, service provider's security procedures and features)
  - compatibility

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- maintenance (software updates, downtime, staff expertise)
- getting a service/storage up and running quickly
- performance considerations (responsiveness to user, complexity of task, available devices and communication technologies).

A2 Impact of modern technologies

Learners should understand how modern technologies impact on the way organisations perform tasks. Learners should understand how technologies are used to manage teams, to enable stakeholders to access tools and services, and to communicate effectively. Learners should understand the positive and negative impact that the use of modern technologies has on organisations and stakeholders.

- Changes to modern teams facilitated by modern technologies:
  - world teams (not bound by geographical restrictions, diversity)
  - multicultural
  - inclusivity (facilitation of member's needs)
  - 24/7/365 (no set work hours, team members in different time zones)
  - flexibility (remote working versus office based, permanent versus casual staff).
- How modern technologies can be used to manage modern teams:
  - collaboration tools
  - communication tools
  - scheduling and planning tools.
- How organisations use modern technologies to communicate with stakeholders:
  - communication platforms (website, social media, email, voice communication)
  - selection of appropriate communication channels (private/direct message, public status update) for sharing information, data and media.
- How modern technologies aid inclusivity and accessibility:
  - interface design (layout, font and colour selection)
  - accessibility features (screen reader support, alt text, adjustable typeface/font size, text to speech/'listen to this page')
  - flexibility of work hours and locations.
- Positive and negative impacts of modern technologies on organisations in terms of:
  - required infrastructure (communication technologies, devices, local and web-based platforms)
  - demand on infrastructure of chosen tools/platforms
  - availability of infrastructure
  - 24/7 access or security of distributed/dispersed data
  - collaboration or inclusivity (age, health, additional needs, multicultural)
  - accessibility (meeting legal obligations, provision requirements)
  - remote working.
- Positive and negative impacts of modern technologies on individuals:
  - flexibility (home/remote working)
  - working styles (choice of time, device, location)
  - impact on individual's mental wellbeing (depression, loneliness, self-confidence, separation from stressful environment, feel in control of own schedule, schedule adjusted to meet needs of family, less time commuting).

B Cyber security

Learners 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.

B1 Threats to data

Learners should understand why systems are attacked, the nature of attacks and how they occur, and the potential impact of breaches in security on the organisation and stakeholders.

- Why systems are attacked:
  - fun/challenge
  - industrial espionage or financial gain
  - personal attack
  - disruption
  - data/information theft.
- External threats (threats outside the organisation) to digital systems and data security:
  - unauthorised access/hacking (black hat)
  - malware (virus, worms, botnet, rootkit, Trojan, ransomware, spyware)
  - denial of service attacks or phishing (emails, texts, phone calls)
  - pharming
  - social engineering
  - shoulder surfing
  - ‘man-in-the-middle’ attacks.
- Internal threats (threats within the organisation) to digital systems and data security:
  - unintentional disclosure of data
  - intentional stealing or leaking of information
  - users overriding security controls
  - use of portable storage devices
  - downloads from internet
  - visiting untrustworthy websites.
- Impact of security breach:
  - data loss
  - damage to public image
  - financial loss
  - reduction in productivity
  - downtime
  - legal action.

B2 Prevention and management of threats to data

Learners should understand how different measures can be implemented to protect digital systems. They should understand the purpose of different systems and how their features and functionality protect digital systems. Learners should understand how one or more systems or procedures can be used to reduce the nature and/or impact of threats.

- User access restriction:
  - physical security measures (locks)
  - passwords
  - using correct settings and levels of permitted access
  - biometrics
  - two-factor authentication (who you are, what you know, what you have).
- Data level protection:
  - firewall (hardware and software)
  - software/interface design (obscuring data entry, autocomplete, 'stay logged in')
  - anti-virus software
  - device hardening
  - procedures for backing up and recovering data
  - encryption of stored data (individual files, drive)
  - encryption of transmitted data.
- Finding weaknesses and improving system security:
  - ethical hacking (white hat, grey hat)
  - penetration testing
  - analyse system data/behaviours to identify potential risks.

B3 Policy

Learners should understand the need for and nature of security policies in organisations. They should understand the content that constitutes a good security policy and how it is communicated to individuals in an organisation. To ensure that potential threats and the impact of security breaches are minimised, learners should understand how procedures in security policies are implemented in organisations.

- Defining responsibilities:
  - who is responsible for what
  - how to report concerns
  - reporting to staff/employees.
- Defining security parameters:
  - password policy
  - acceptable software/installation/usage policy
  - parameters for device hardening.
- Disaster recovery policy:
  - who is responsible for what
  - dos and don'ts for staff
  - defining the backup process (what is backed up, scheduling, media)
  - timeline for data recovery
  - location alternative provision (hardware, software, personnel).

- Actions to take after an attack:
  - investigate (establish severity and nature)
  - respond (inform/update stakeholders and appropriate authorities)
  - manage (containment, procedures appropriate to nature and severity)
  - recover (implement disaster recovery plan, remedial action)
  - analyse (update policy and procedures).

C The wider implications of digital systems

Learners should understand the wider implications of digital systems and their use. Learners 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. Learners should understand the procedures that organisations must follow in order to conform to legal requirements and professional guidelines.

C1 Responsible use

Learners should consider the responsible use of digital systems, including how systems and services share and exchange data as well as the environmental considerations of increased use.

- Shared data (location-based data, transactional data, cookies, data exchange between services):
  - benefits of using shared data
  - drawbacks of using shared data
  - responsible use (legal considerations, privacy, ethical use).
- Environmental:
  - impact of manufacturing, use, and disposal of IT systems (energy, waste, rare materials)
  - considerations when upgrading or replacing digital systems
  - usage and settings policies (auto power off, power-saving settings, hard copy versus electronic distribution).

C2 Legal and ethical

Learners should understand the scope and purpose of legislation (valid at time of delivery) that governs the use of digital systems and data, and how it has an impact on the ways in which organisations use and implement digital systems. Learners should understand the wider ethical considerations of use of technologies, data and information, and organisations' responsibilities to ensure that they behave in an ethical manner.

- Importance of providing equal access to services and information:
  - benefits to organisations, individuals and society
  - legal requirements
  - professional guidelines/accepted standards.
- Net neutrality and how it impacts on organisations.

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- The purpose and use of acceptable use policies:
  - scope – who the document applies to
  - assets – the equipment, documents, and knowledge covered by the policy
  - acceptable – behaviours that are expected/required by an organisation
  - unacceptable – behaviours that are not allowed by an organisation
  - monitoring – description of how behaviour is monitored by an organisation
  - sanctions – defining the processes and potential sanctions if unacceptable behaviour occurs
  - agreement – acknowledge (sign, click) that an individual agrees to abide by the policy.
- Blurring of social and business boundaries:
  - use of social media for business purposes
  - impact of personal use of digital systems (social media, web) on professional life.
- Data protection principles:
  - lawful processing
  - collected only for specific purpose
  - only needed information is collected
  - should be accurate
  - kept only as long as is necessary
  - data subject rights
  - protected
  - data not transferred to countries with less protection.
- Data and the use of the internet:
  - the right to be forgotten
  - appropriate and legal use of cookies and other transactional data.
- Dealing with intellectual property:
  - the importance of intellectual property in organisations
  - methods of identifying/protecting intellectual property (trademarks, patents, copyright)
  - legal and ethical use of intellectual property (permissions, licensing, attribution).
- The criminal use of computer systems:
  - unauthorised access
  - unauthorised modification of materials
  - creation of malware
  - intentional spreading of malware.

D Planning and communication in digital systems

Learners should be able to interpret and use standard conventions to combine diagrammatical and written information to express an understanding of concepts.

D1 Forms of notation

- Understand how organisations use different forms of notation to explain systems, data and information:
  - data flow diagrams
  - flowcharts
  - system diagrams
  - tables
  - written information.
- Be able to interpret information presented using different forms of notation in a range of contexts.
- Be able to present knowledge and understanding using different forms of notations:
  - data flow diagrams
  - information flow diagrams
  - flowcharts.

Links to other components

The table below illustrates how knowledge, understanding and skills from components across this qualification could be integrated to the delivery of this component. The skills support learners in making a synoptic response.

Component	Material from the component that learners could select and integrate in their synoptic assessment response to Component 3
Component 1: Exploring User Interface Design Principles and Project Planning Techniques	**Topic area A1** • Types of interface • Factors affecting the choice of user interface **Topic area A2** • Accessibility needs **Topic area B1** • Planning tools • Methodologies
Component 2: Collecting, Presenting and Interpreting Data	**Topic area A7** • Threats to individuals

Key terms typically used in assessment

The following table shows the key terms that will be used consistently by Pearson in our assessments to ensure learners are rewarded for demonstrating the necessary skills.

Please note: the list below will not necessarily be used in every paper and is provided for guidance only.

Command verb	Definition
Annotate the diagram by: • identifying and labelling XX • stating XX	Identify and label the diagram and state what each, i.e. feature/process/characteristic is for, their purpose etc.
Describe	Present two (or more) linked descriptive points on characteristics, features, uses or processes. Do not need to include a justification or reason.
Discuss	Consider the different aspects in detail of an issue, situation, problem or argument and how they interrelate.
Draw	Produce a diagram or process flow using information from the given context.
Evaluate	Consider various aspects of a subject's qualities in relation to its context such as: strengths and weaknesses, advantages and disadvantages, pros and cons. Come to a judgement supported by evidence which will often be in the form of a conclusion.
Explain	Present one point that identifies a reason, way, benefit, or importance, etc. and a second point that justifies/explains the first point. Where used, a third point is a further expansion of the justification/explanation.
Give	Provide a response, i.e. feature, characteristic or use of.
Identify	Select the correct answer from the given context.
State	Recall from memory facts, terms, processes, legal implications, etc. or provide the correct answer to the given context.

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4 Planning your programme

Is there a learner entry requirement?

As a qualification designed to be used in Key Stage 4, there are no formal entry requirements. It is assumed that learners are studying GCSEs and other qualifications alongside this qualification. As a centre, it is your responsibility to ensure that learners who are recruited make reasonable progress and are likely to achieve at this level. Overall achievement can be improved by highlighting links between this qualification and other qualifications as part of a Key Stage 4 programme of learning, such as through project-based learning.

What level of sector knowledge is needed to teach this qualification?

We do not set any requirements for teachers but recommend that centres assess the overall skills and knowledge of the teaching team to ensure that they are relevant and up to date. This will give learners a rich programme that will prepare them for progression.

What resources are required to deliver this qualification?

As part of your centre approval, you will need to show that the necessary material resources and workspaces are available to deliver the qualifications. For some components, specific resources are required; please refer to individual components.

How does this qualification contribute to Key Stage 4 learning?

This qualification gives learners opportunities to apply learning from GCSE English and mathematics to vocational learning. For example, the skills developed in extended writing can be applied when producing written work or presentation notes on interface design or how data collection methods affect quality of data. Mathematics skills can be applied when using functions to capture and manipulate data to create a dashboard and when identifying patterns and trends in data.

What makes good vocational teaching?

The approach to vocational teaching must be led by what is right for the particular sector. For vocational teaching to be effective, it is important that teaching and learning are contextualised to the relevant sector. Therefore, we have provided delivery guidance for each component and other resources, such as Schemes of Work, to help you build a course that contextualises learning in real-life and/or employment scenarios. This draws naturally on the kind of broader attributes valued in the sector, for example creativity, and the ability to plan and review work, as well as the more general skills needed in work that fit well with project-based learning, for example teamwork and independent learning.

5 Non-exam internal assessment

Pearson-set Assignments

In this qualification, there are two non-exam internally-assessed components, which will be assessed through Pearson-set Assignments.

These assignments are set by Pearson and are summative assessments, which means they are distinct periods of assessment that are separate from the practice, exploration activities and formative assessments that have been used during the learning period. It is important that you explain to learners that these assignments are being used to formally assess their performance against the learning outcomes.

Each Pearson-set Assignment will:

- provide a vocational context to engage learners and to set the scene for the tasks to be completed across all the learning outcomes. In some instances, you can adapt the context to make it more relevant to your learners; the guidance provided within each assignment will clearly state whether there are opportunities to contextualise
- give learners clear tasks with the associated marks and the approximate time to complete each task
- give clear structures for evidence and specify the form(s) of evidence that learners should produce
- ensure that learners are drawing on the specified range of teaching content
- allow learners to select and apply their learning using appropriate self-management of tasks if a component contains synoptic assessment.

For each component, new Pearson-set Assignments are released twice a year through the secure area of our website. Release dates will vary by sector; please refer to individual components for the annual release date of the assignments. Each Pearson-set Assignment will be clearly marked with the assessment series and academic year of release; you must ensure that you are using the current series' assignment to assess your learners.

Each Pearson-set Assignment is to be issued to learners with a defined start date and completion date set by the centre and clear requirements for the evidence that they need to provide. You will need to give learners a guide that explains how these assignments are used for assessment, how they relate to the teaching programme, and how learners should use and reference source materials, including what would constitute plagiarism. The guide should also set out your approach to operating assessment, such as how learners must submit work and request extensions.

All Pearson-set Assignments must be completed under supervised conditions; please refer to the guidance in the Pearson-set Assignment for individual components for any supervision requirements specific to each assignment.

Sample Pearson-set Assignments for internal components

Each non-exam internally-assessed component has a sample Pearson-set Assignment that accompanies this specification. This sample assignment is an example of what the assessment will look like in terms of the feel and level of demand of the assessment.

The sample assignment shows the nature of the tasks that may appear in the live Pearson-set Assignments and will give you a good indication of how the assessments will be structured. While the sample Pearson-set Assignment can be used for practice with learners, as with any assessment the content covered and specific details of the tasks may vary in each live Pearson-set Assignment, however, the marking grids will remain unchanged.

The sample Pearson-set Assignment can be downloaded from our website. This is for you to use and mark as you wish. Pearson does not mark sample Pearson-set Assignments.

Marking Pearson-set Assignments

Live Pearson-set Assignments are marked by the centre and will be moderated by a moderator appointed by Pearson. Centres are responsible for appointing someone to act as the assessor. This may be you (the teacher who has delivered the programme) or another teacher from the subject team.

Learners' evidence for a Pearson-set Assignment must be marked using the marking grid for that particular component. Each learner's marks are to be recorded on an Assessment Record Sheet (or centre devised documentation) and authenticated by the learner and Assessor. The Assessment Record Sheet is also required to be submitted with the learner's work for moderation.

The marking grid has four mark bands, each containing the descriptors specifying the level of knowledge, understanding and skills that learners are required to demonstrate to be awarded the marks associated with that band for each task. The descriptors for each band are written to reflect the marks at the top of the mark band; the descriptors should be read and applied as a whole.

Using a 'best fit approach' to marking the assignments

In applying the marking grid, you are required to first make a holistic judgement about which mark band most closely matches the learner's response for the evidence being assessed. Each mark band contains a number of 'bulleted traits' that in combination provide a descriptor of the learner's expected performance in relation to the individual task within the assignment. Consideration should also be given to the descriptors in the mark bands above and below to ensure the correct band is selected. The learner's response does not have to meet all the characteristics of a mark band's descriptor before being placed in that band, as long as it meets more of the characteristics of that mark band than of any other.

After placing the learner's response within a mark band, you should then make a more refined judgement as to whether the learner's response is towards the higher or the lower end of the range for that band and allocate a final mark accordingly within the marks available in that band.

Further guidance on deciding a final mark

The award of marks must be directly related to the descriptors in a mark band. You should be prepared to use the full range of marks available. When deciding upon a final mark, you should take into account how well the learner's response meets the requirements of the descriptor in that mark band.

- If the learner's response meets the requirements of the descriptor fully, you should be prepared to award full marks within the mark band. The top mark in the band is used for a learner's response that is as good as can realistically be expected in that band.
- If the learner's response only barely meets the requirements of the descriptor (but is better than the previous descriptor), you should consider awarding marks at the bottom of the mark band. The bottom mark in the band is used for a learner's response that is the weakest that can be expected in that mark band.
- The middle marks of the mark band are for a learner's response that is a reasonable match to the descriptor. This might represent a balance between some characteristics of the descriptor that are fully met and others that are barely met.
- Where there is no evidence worthy of credit, no marks (0 marks) must be awarded.

Authenticity of learner work

You must ensure that learner evidence is authentic by supervising them during the assessment period according to the requirements of each internally-assessed component. You must take care not to provide direct input, instructions or specific feedback that may compromise authenticity.

Once an assessment has begun, learners must not be given feedback that relates specifically to their evidence and how it can be improved, as learners must work independently.

You must assess only learner work that is authentic, i.e. learners' own independent work. Learners must authenticate the evidence that they provide for assessment through signing a declaration stating that it is their own work.

You must complete a declaration that:

- the evidence submitted for this assignment is the learner's own
- the learner has clearly referenced any sources used in the work
- you understand that false declaration is a form of malpractice.

Centres can use Pearson templates or their own templates to document authentication.

During assessment, if you suspect that some or all of the evidence from a learner is not authentic, you must take appropriate action using the centre's policies for malpractice. Further information is given in *Section 9: Administrative arrangements*.

Resubmission of evidence and retakes

Prior to submitting marks for moderation, where a learner has not achieved their expected level of performance for an assignment, the centre may authorise one opportunity for learners to improve evidence and resubmit for internal assessment within 15 days. Internal assessment should be conducted in time to allow for this resubmission window prior to moderation should it be needed.

Feedback to learners can only be given in order to clarify areas where they have not achieved expected levels of performance. Learners cannot receive any specific guidance or instruction about how to improve work to meet mark bands, or be given solutions to questions or problems in the tasks.

Following submission of marks for moderation, there is no further opportunity to resubmit improved evidence based on the same completed assignment. Learners may be offered a single retake opportunity in a later assessment series using the new Pearson-set Assignment released for that series. Retakes must be completed prior to or in the same series as the externally assessed component to meet terminal assessment requirements.

For further information on offering resubmission of evidence and retake opportunities, giving feedback, conditions for supervision and planning, and record-keeping requirements, you should refer to the centre guidance for internal assessment for BTEC Tech Awards, available on our website. All members of the assessment team need to refer to this document.

Internal standardisation

If there are a number of staff acting as assessors for this qualification, prior to internal assessment, you must carry out internal standardisation to make sure all learners' work is assessed consistently to the required standard.

If you are the only assessor in your centre for this qualification, it is still advisable to make sure your assessment decisions are internally standardised by someone else in your centre. This could be someone who has experience of the nature of this qualification or relevant subject knowledge.

Pearson will supply standardisation materials giving assessors the opportunity to discuss standardised learner work, assessment and administration.

Marking should be applied consistently as adjustments made through moderation can affect the whole cohort. Effective internal standardisation ensures that the work of all learners at the centre is marked to the same standard. It may not be possible for moderation to take place if effective internal standardisation has not been carried out.

You are not required to submit evidence of internal standardisation of assessment decisions to the moderator, but it must be retained in the centre should Pearson request it, or where there is a disagreement with the marking.

If it appears to the Pearson moderator that internal standardisation has not been carried out, they may discontinue the moderation process. The centre will then be required to remark all learners' work and carry out internal standardisation; another moderation activity will then be scheduled at the centre's expense. Submission of marks will be considered as confirmation that internal standardisation has taken place.

Moderation

The purpose of external moderation is to ensure that the standard of marking is the same for each centre and across different assessors within a centre.

There are two annual moderation windows, December/January and May/June; the first moderation window for this qualification is December/January 2023.

Centres must ensure that they plan their assessment so that they can make the necessary entries and submit marks to meet the moderation deadlines. More details are provided in the *Administrative Support Guide*.

6 Quality assurance

Centre and qualification approval

As part of the approval process, your centre must make sure that the resource requirements listed below are in place before offering the qualification.

- Centres must have appropriate physical resources (for example equipment, IT, learning materials, teaching rooms) to support the delivery and assessment of the qualification.
- Staff involved in the assessment process must have relevant expertise and/or occupational experience.
- There must be systems in place to ensure continuing professional development for staff delivering the qualification.
- Centres must have in place appropriate health and safety policies relating to learners' use of equipment.
- Centres must deliver the qualification in accordance with current equality legislation.
- Centres should refer to the teacher guidance section in individual components to check for any specific resources required.

Continuing quality assurance

The key principles of quality assurance are that:

- a centre delivering BTEC programmes must be an approved centre, and must have approval for the programmes or groups of programmes that it is delivering
- the centre agrees, as part of gaining approval, to abide by specific terms and conditions around the effective delivery and quality assurance of assessment; it must abide by these conditions throughout the period of delivery
- Pearson makes available to approved centres a range of materials and opportunities, intended to exemplify the processes required for effective assessment, and examples of effective standards. Approved centres must use the materials and services to ensure that all staff delivering BTEC qualifications keep up to date with the guidance on assessment
- an approved centre must follow agreed protocols for standardisation of assessors, for the planning, monitoring and recording of assessment processes, and for dealing with special circumstances, appeals and malpractice.

We will make sure that each centre follows best practice and employs appropriate technology to support quality-assurance processes, where practicable. We work to support centres and seek to make sure that our quality-assurance processes do not place undue bureaucratic processes on centres. We monitor and support centres in the effective operation of assessment and quality assurance.

The methods we use to do this for BTEC Tech Award qualifications include:

- making sure that all centres complete appropriate declarations at the time of approval
- undertaking approval visits to centres
- making sure that centres have effective teams of assessors who are trained to undertake assessment
- assessment moderation, through requested samples of assessments, completed assessed learner work and associated documentation
- an overarching review and assessment of a centre's strategy for delivering and quality assuring its BTEC programmes, for example making sure that the synoptic component is placed appropriately in the delivery of the programme.

Centres that do not fully address and maintain rigorous approaches to delivering, assessing and quality assurance cannot seek certification for individual programmes or for the BTEC Tech Award qualifications. An approved centre must make certification claims only when authorised by us and strictly in accordance with requirements for reporting.

7 External assessment

Role of external assessment for the BTEC Tech Award suite

The externally-assessed component in the BTEC Tech Award suite comprises 40 percent of the total qualification GLH. The external assessment is weighted to contribute the same proportion of the overall qualification grade. To ensure that the assessment is fully challenging and that the grading of the component reflects performance in a qualification as a whole, the assessment is synoptic and is taken at or near the end of a learner's programme. Our approach ensures that learners are able to show depth of understanding through being able to apply their conceptual and sector knowledge in practical contexts. The external assessment is rigorous but fully valid as preparation for progression to vocational qualifications.

This section gives an overview of the key features of external assessment and how you, as an approved centre, can offer it effectively.

External assessment

The *Summary of assessment* section in Component 3 sets out the specific arrangements for the external assessment. This assessment is taken under supervised conditions. The expected evidence that must be submitted is explained in the component and sample assessment materials (SAMs). Your learners will undertake the external assessment during the period timetabled by Pearson.

Timing of external assessment

External assessments for this qualification are available twice a year in January/February and May/June. First assessment is January/February 2024. Learners are permitted to have one resit of an external assessment prior to certification by taking a new assessment.

As this is the terminal assessment for the qualification, learners can only use the external assessment results achieved in the same assessment series in which they are requesting certification for the qualification. For the options around certification when learners are resitting, please refer to the Tech Awards section of the Pearson website.

Sample assessment materials

Each externally-assessed component has a set of SAMs that accompanies this specification. SAMs are there to give you an example of what the external assessment will look like in terms of the feel and level of demand of the assessment.

The SAMs show the range of possible activity types that may appear in the actual assessments and give you a good indication of how the assessments will be structured. While SAMs can be used for practice with learners, as with any assessment the content covered and specific details of the activities will vary in each assessment.

These sample assessments can be downloaded from our website. We will provide further materials over time to support assessment, for example sample marked learner work, further sample materials and examiner feedback.

Conduct of external assessment

The external assessment is set and marked by Pearson. You need to ensure that learners are aware that they need to work independently and of the requirements for any external assessment.

We define the degree of control for assessments for BTEC qualifications in this specification as:

- **high control**
  this is the completion of assessment in formal invigilated examination conditions.

Further information onFurther information on responsibilities for conducting external assessment is given in the document *Instructions for Conducting External Assessments (ICEA)*, available on our website, qualifications.pearson.com (search for *ICEA*).

Pearson marking grades

Marking

Pearson will allocate standardised examiners to mark the evidence remotely. Your Examinations Officer will be given guidance as to how to send this evidence to us or the examiner directly.

We review quality of marking throughout the marking period and ensure that our examiners mark to the agreed marking scheme during this time.

8 Final grading and awarding

Awarding and reporting for the qualification

The BTEC Tech Award qualifications will be graded and certificated on a seven-grade scale from Level 2 Distinction* to Level 1 Pass. Individual components will be graded on a six-point scale from Level 2 Distinction to Level 1 Pass. Individual component results will be reported.

Learners who do not meet the minimum requirements for a qualification grade to be awarded will be recorded as Unclassified (U) and will not be certificated.

Grade boundaries will be set for each component in the series in which it is offered through a process known as awarding. Awarding is used to set grade boundaries and ensure that standards are maintained over time. This is important as we must ensure that learners have the same opportunity to achieve, regardless of the assessment opportunity.

Learners' raw component marks will be converted to a Uniform Mark Scale (UMS). The UMS is used to convert learners' component 'raw' marks into uniform marks. This is done in order to standardise marks from one series to another. (Further details of the UMS are provided below in the section 'Calculation of a Qualification Grade'.)

The awarding and certification of the qualification will comply with the requirements of the Office of Qualifications and Examinations Regulation (Ofqual), CCEA Regulation and Qualifications Wales.

Eligibility for an award

In order to be awarded a qualification, a learner must be entered for all three components and meet the terminal assessment rule.

Subject to eligibility, Pearson will automatically calculate the qualification grade for your learners when the qualification claim is made.

In order to meet the terminal rule requirement, a learner must take the external assessment, Component 3 in their final series, i.e. the one in which a final award is claimed. If resitting, any prior attempts of Component 3 will not be used towards the learner's qualification grade, even if the result from the earlier attempt is higher.

The Level 2 Distinction* grade at qualification level will be awarded only if a learner has achieved a Level 2 Distinction in each component and the minimum number of uniform marks for the Level 2 Distinction* at qualification level.

Calculation of the qualification grade

The final grade awarded for a qualification represents an aggregation of a learner's performance across the three components. A higher performance in some components may be balanced by a lower outcome in others. A component grade of U (Unclassified) is considered an outcome for the purposes of aggregating a final award.

The UMS is used to convert learners' component 'raw' marks into uniform marks. This is done in order to standardise marks from one series to another. For example, a learner who just achieves a Level 2 Pass in an internal component one series will receive the same uniform mark as a learner achieving that same component grade the following series, regardless of their raw marks.

The minimum uniform marks required for each grade for each component

Components 1 and 2

Component Grade	L2D	L2M	L2P	L1D	L1M	L1P
Maximum UMS = 90	72	63	54	45	36	27

Learners who do not achieve the standard required for a Level 1 Pass will receive a uniform mark in the range 0–26.

Component 3

Component Grade	L2D	L2M	L2P	L1D	L1M	L1P
Maximum UMS = 120	96	84	72	60	48	36

Learners who do not achieve the standard required for a Level 1 Pass will receive a uniform mark in the range 0–35.

Qualification level results: the minimum uniform marks required for each grade

Qualification Grade	L2D*	L2D	L2M	L2P	L1D	L1M	L1P
Maximum UMS = 300	270	240	210	180	150	120	90

Learners who do not achieve the standard required for a Level 1 Pass grade will receive a uniform mark in the range 0–89.

The Level 2 Distinction* grade at qualification level will be awarded only if a learner has achieved a Level 2 Distinction in each component and the minimum number of uniform marks for the Level 2 Distinction* at qualification level.

Results issue

Results are issued in line with advertised timeframes, which can be found in the 'key dates' section of our *Information Manual* available on our website: qualifications.pearson.com (search for key dates).

9 Administrative arrangements

Introduction

This section focuses on the administrative requirements for delivering BTEC Tech Award qualifications. It will be of value to Quality Nominees, Programme Leads, Assessors and Examinations Officers.

Learner registration and entry

Learners must be registered in line with the *Information Manual* (by 1 November). Shortly after learners start the programme of learning, you need to make sure that they are registered for the qualification and that appropriate arrangements are made for internal and external assessment. You need to refer to our *Information Manual* for information on making registrations for the qualification and entries for internal and external assessments.

Learners can be formally assessed only for a qualification on which they are registered. If learners' intended qualifications change, for example if a learner decides to choose a qualification from a different sector, then you must transfer the learner appropriately.

Access to assessment

All assessments need to be administered carefully to ensure that all learners are treated fairly and that results and certification are issued on time to allow learners to access their chosen progression opportunities.

Our equity, diversity and inclusion policy requires all learners to have equitable opportunity to access our qualifications and assessments, and that our qualifications are awarded in a way that is fair to every learner. We are committed to making sure that:

- learners with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

Further information on access arrangements can be found in the Joint Council for Qualifications (JCQ) document *Access Arrangements, Reasonable Adjustments and Special Consideration for General and Vocational Qualifications*.

The Pearson *Equity, Diversity and Inclusion in Pearson Qualifications and Related Services Policy* is on our website.

Administrative arrangements for internal assessment

Records

You are required to retain records of assessment for each learner. Records should include assessments taken, marks awarded and any adjustments or appeals. Further information can be found in our *Information Manual.* We may ask to audit your records, so they must be retained as specified.

Reasonable adjustments for assessment

A reasonable adjustment is one that is made before a learner takes an assessment to ensure that they have fair access to demonstrate the requirements of the assessments. You are able to make adjustments to internal assessments to take account of the needs of individual learners. In most cases, this can be achieved through a defined time extension or by adjusting the format of evidence. We can advise you if you are uncertain as to whether an adjustment is fair and reasonable. You need to plan for time to make adjustments if necessary.

Further details on how to make adjustments for learners with protected characteristics are on our website in the document *Supplementary guidance for reasonable adjustment and special consideration in vocational internally-assessed components.*

Special consideration

Special consideration is given after an assessment has taken place for learners who have been affected by adverse circumstances, such as illness. You must operate special consideration in line with our policy (see previous paragraph). You can provide special consideration related to the period of time given for evidence to be provided or for the format of the assessment if it is equally valid. You may not substitute alternative forms of evidence to that required in a component, or omit the application of any part of a mark scheme to judge attainment. Pearson can consider applications for special consideration in line with the policy.

Appeals against assessment

Your centre must have a policy for dealing with appeals from learners. These appeals may relate to assessment decisions being incorrect or assessment not being conducted fairly. The first step in such a policy could be a consideration of the evidence by a Programme Lead or other member of the programme team. Sufficient time should be allowed for potential appeals after assessment decisions have been given to learners. If there is an appeal by a learner, you must document the appeal and its resolution. Learners have a final right of appeal to Pearson but only if the procedures that you have put in place have not been followed. Further details are given in our *Internal Assessment in Vocational Qualifications: Reviews and Appeals Policy* document.

Administrative arrangements for external assessment

Entries and resits

For information on the timing of assessment and entries, please refer to the annual examinations timetable on our website. Learners are permitted to have one resit of an external assessment prior to certification where necessary, however please note the terminal rule for the external assessment.

Access arrangements requests

Access arrangements are agreed with Pearson before an assessment. They allow learners with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do without changing the demands of the assessment.

Access arrangements should always be processed at the time of registration. Learners will then know what type of arrangements are in place for them.

Granting reasonable adjustments

For external assessment, a reasonable adjustment is one that we agree to make for an individual learner. A reasonable adjustment is defined for the individual learner and informed by the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, to include:

- the needs of the learner with the disability
- the effectiveness of the adjustment
- the cost of the adjustment
- the likely impact of the adjustment on the learner with the disability and other learners.

Adjustment may be judged unreasonable and not approved if it involves unreasonable costs or timeframes or affects the integrity of the assessment.

Special consideration requests

Special consideration is an adjustment made to a learner's mark or grade after an external assessment to reflect temporary injury, illness or other indisposition at the time of the assessment. An adjustment is made only if the impact on the learner is such that it is reasonably likely to have had a material effect on that learner being able to demonstrate attainment in the assessment.

Centres are required to notify us promptly of any learners that they believe have been adversely affected and request that we give special consideration. Further information can be found in the special requirements section on our website.

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Dealing with malpractice in assessment

'Malpractice' refers to acts that undermine the integrity and validity of assessment, the certification of qualifications, and/or may damage the authority of those responsible for delivering the assessment and certification.

Pearson does not tolerate actual or attempted actions of malpractice by learners, centre staff or centres in connection with Pearson qualifications. Pearson may impose sanctions on learners, centre staff or centres where malpractice or attempted malpractice has been proven.

Malpractice may occur or be suspected in relation to any component/unit or type of assessment within a qualification. For further details on malpractice and advice on preventing malpractice by learners, please see Pearson's *Centre Guidance: Dealing with Malpractice*, available on our website.

Centres are required to take steps to prevent malpractice and to assist with investigating instances of suspected malpractice. Learners must be given information that explains what malpractice is and how suspected incidents will be dealt with by the centre. The *Centre Guidance: Dealing with Malpractice* document gives full information on the actions we expect you to take.

Pearson may conduct investigations if we believe a centre is failing to conduct internal assessment according to our policies. The above document gives further information and examples, and details the sanctions that may be imposed.

In the interests of learners and centre staff, centres need to respond effectively and openly to all requests relating to an investigation into an incident of suspected malpractice.

Learner malpractice

The head of centre is required to report incidents of suspected learner malpractice that occur during the delivery of Pearson qualifications. We ask centres to complete *JCQ Form M1* (www.jcq.org.uk/malpractice) and email it with any supporting documents (signed statements from the learner, invigilator, copies of evidence, etc.) to the Investigations Processing team at candidatemalpractice@pearson.com. The responsibility for determining appropriate sanctions on learners lies with Pearson.

Learners must be informed at the earliest opportunity of the specific allegation and the centre's malpractice policy, including the right of appeal. Learners found guilty of malpractice may be disqualified from the qualification for which they have been entered with Pearson.

Failure to report malpractice constitutes staff or centre malpractice.

Teacher/centre malpractice

The head of centre is required to inform Pearson's Investigations team of any incident of suspected malpractice (which includes maladministration) by centre staff before any investigation is undertaken. The head of centre is requested to inform the Investigations team by submitting a *JCQ M2* form (downloadable from www.jcq.org.uk/malpractice) with supporting documentation to pqsmalpractice@pearson.com. Where Pearson receives allegations of malpractice from other sources (for example Pearson staff, anonymous informants), the Investigations team will conduct the investigation directly or may ask the head of centre to assist.

Pearson reserves the right in cases of suspected malpractice to withhold the issuing of results/certificates while an investigation is in progress. Depending on the outcome of the investigation, results and/or certificates may not be released or they may be withheld.

You should be aware that Pearson may need to suspend certification when undertaking investigations, audits and quality assurances processes. You will be notified within a reasonable period of time if this occurs.

Sanctions and appeals

Where malpractice is proven, we may impose sanctions, such as:

- mark reduction for affected external assessments
- disqualification from the qualification
- debarment from registration for Pearson qualifications for a period of time.

If we are concerned about your centre's quality procedures, we may impose sanctions such as:

- working with centres to create an improvement action plan
- requiring staff members to receive further training
- placing temporary suspensions on certification of learners
- placing temporary suspensions on registration of learners
- debarring staff members or the centre from delivering Pearson qualifications
- suspending or withdrawing centre approval status.

The centre will be notified if any of these apply.

Pearson has established procedures for centres that are considering appeals against sanctions arising from malpractice. Appeals against a decision made by Pearson will normally be accepted only from the head of centre (on behalf of learners and/or members or staff) and from individual members (in respect of a decision taken against them personally). Further information on appeals can be found in the *JCQ Appeals* booklet (https://www.jcq.org.uk/exams-office/appeals).

Certification and results

Once a learner has completed all the required components for a qualification, the centre can claim certification for the learner, provided that quality assurance has been successfully completed. For the relevant procedures, please refer to our *Information Manual*. You can use the information provided on qualification grading to check overall qualification grades.

Results issue

Learner results will then be issued to centres. The result will be in the form of a grade. You should be prepared to discuss performance with learners, making use of the information we provide and post-results services.

Post-assessment services

It is possible to transfer or reopen registration in some circumstances. The *Information Manual* gives further information.

Additional documents to support centre administration

As an approved centre, you must ensure that all staff delivering, assessing and administering the qualifications have access to this documentation. These documents are reviewed annually and are reissued if updates are required.

- *Centre Guide for BTEC Moderation*: this sets out how we will carry out quality assurance of standards and how you need to work with us to achieve successful outcomes.
- *Information Manual*: this gives procedures for registering learners for qualifications, transferring registrations, entering for external assessments and claiming certificates.
- *Regulatory policies*: our regulatory policies are integral to our approach and explain how we meet internal and regulatory requirements. We review the regulated policies annually to ensure that they remain fit for purpose. Policies related to this qualification include:
  - *JCQ Adjustments for Candidates with Disabilities and Learning Difficulties, Access Arrangements and Reasonable Adjustments*
  - age of learners
  - centre guidance for dealing with malpractice
  - recognition of prior learning and process.

This list is not exhaustive; a full list of our regulatory policies can be found on our website.

10 Resources and support

Our aim is to give you support to enable you to deliver the BTEC Tech Award suite with confidence. You will find resources to support teaching and learning and professional development on our website.

Support for setting up your course and preparing to teach

Schemes of Work

The free Schemes of Work give suggestions and ideas on how to teach the qualifications, including teaching tips and ideas, assessment preparation and suggestions for further resources.

Course planner

This gives a high-level overview of how to plan teaching term by term over one or two years.

Support for teaching and learning

Pearson Learning Services provides a range of engaging resources to support BTEC qualifications, including:

- student textbooks in ebook and print formats
- teacher support, including slides, interactive activities and videos, via the ActiveLearn Digital Service
- teaching and learning resources may also be available from a number of other publishers.

Details of Pearson's own resources and all endorsed resources can be found on our website.

Support for assessment

Sample assessment materials (SAMs) for externally-assessed components

Sample assessment materials are available for the externally-assessed component and can be downloaded from the Pearson Qualifications website. An additional set of sample assessment materials for the externally-assessed component will also be available, allowing your learners further opportunities for practice.

Sample Pearson-set Assignments for non-exam internally-assessed components

Sample Pearson-set Assignments are available for the non-exam internally-assessed components and can be downloaded from the Pearson Qualifications website.

Training and support from Pearson

People to talk to

There are many people who can support you and give you advice and guidance on delivering your BTEC Tech Awards. They include:

- Lead Standards Verifiers – they can support you in preparing for the moderation activity.
- Subject Advisors – they are available for all sectors. They understand all Pearson qualifications in their sector and so can answer sector-specific queries on planning, teaching, learning and assessment.
- Customer Services – the 'Support for You' section of our website gives the different ways in which you can contact us for general queries. For specific queries, our service operators can direct you to the relevant person or department.
- Pearson Quality Advisors – they can support with all quality assurance related aspects of your programme.

Training and professional development

We provide a range of training and professional development events to support the introduction, delivery, assessment, quality assurance and administration of BTEC Tech Awards. These sector-specific events, developed and delivered by specialists, are available both face-to-face and online.

Appendix 1

Glossary of terms used for internally-assessed components

This is a summary of the key terms that may be used to define the requirements in the components.

Term	Definition
Account	Description of particular events or situations.
Accurate	Produce work competently, fit for purpose and correctly without significant error.
Accurately	Act or perform with care and precision; correctly within acceptable limits from a standard.
Adequate	The work is acceptable in most areas, but with some gaps or inconsistencies.
All	All relevant content for a specific area, as described in the component.
Analyse/Analysis	Separate information into components and identify characteristics, typically in order to interpret.
Applied	Put to practical use.
Appropriate	Relevant and considered in relation to the purpose/task/context. Select and use skills/knowledge in ways that reflect the aim.
Argument	Propositions supported by evidence.
Balanced	All factors have been considered in equal detail.
Basic	The work comprises the minimum required and provides the base or starting point from which to develop. Includes just the core elements or features without elaboration/ examples/details.
Brief/Briefly	Accurate and to the point but lacking detail/contextualisation/examples.
Clear/ly	Easy to perceive and unambiguous.
Coherent	Logically consistent.
Communicate	Make known, transfer information, convey ideas to others.
Compare/ Comparison	Identify the main factors relating to two or more items/situations, explain the similarities and differences, and in some cases say which is best and why.
Competent	Showing the necessary ability, knowledge, or skill to do something successfully.
Complete	Include the required information.

Term	Definition
Comprehensive	The work is well developed and thorough, covering all pertinent aspects/information to evidence understanding in terms of both breadth and depth. All elements are considered in equal depth and breadth.
Confident/ce	Exhibit certainty, having command over information/argument, etc. Demonstrate secure application of skills or processes.
Consider/ Consideration	Review and respond to given information.
Considered	Reached after, or carried out with, careful thought.
Consistency	Steps in a process followed repeatedly and as intended.
Creative	Using techniques, equipment and processes to express ideas or feelings in new ways.
Demonstrate	Carry out and apply knowledge, understanding and/or skills in a practical situation.
Describe/Description	Set out characteristics. Provide clear information that includes the relevant features, elements or facts.
Detailed	Point-by-point consideration of relevant and accurate features, elements and/or facts supported by examples, showing attention to particulars beyond a simple response.
Developed	Consider and expand on all relevant points in detail.
Dexterity/Dextrous	Perform a difficult action quickly and skilfully with the hands or the ability to think quickly and effectively.
Effective	Applies relevant knowledge and understanding and/or skills appropriately to a task and achieves the desired outcome; successful in producing a desired or intended result.
Excellent	Consistently high standard of skill in completing a practical task.
Extensive	Large in range or scope.
Few	A small number or amount, not many but more than one.
Fully	Completely or entirely; to the fullest extent.
Generally	Appropriate in most cases, with a few exceptions.
Generic	Characteristic of or relating to a class or group of things; not specific.
Good	The work gives information and careful consideration about many/several elements of the context, usually point by point, and lines of reasoning are clear, valid, relevant and logical.
Identify/ing/ Identification	Name or otherwise characterise the main features or purpose of something.

Term	Definition
Inaccurate	Work produced incompetently, unfit for purpose with error.
Incomplete	Not fully finished, with one or more parts of a task missing.
In-depth	Covering most, or all, important points of a subject.
Insightful	Showing an accurate and deep understanding.
Insufficient/ly	Lacking adequate evidence.
Interpret	State the meaning, purpose or qualities of something using images, words or other expressions.
Investigate	Carry out research or trial activities to increase understanding of the application of information.
Irrelevant	Inapplicable in the argument.
Judgement	An opinion formed by discerning and comparing.
Justify	Give reasons or evidence to support an opinion or prove something right or reasonable.
Largely	Appropriate on the whole or to a great extent.
Limited	The work is narrow in competence, ability, range or scope, including only a part of the information required to evidence partial, rather than full, knowledge, understanding and/or skills and is often tentative in relation to context.
Linkages	Factor/content relates directly to another area of content/factor.
Little	A very small amount of evidence, or low number of examples, compared with what was expected, is included in the work.
Logical/ly	Reasonable and sensible. Methods or processes followed in a way that shows clear, sound reasoning.
Many	A large number of (less than 'most').
Methodically	Tasks carried out in an orderly and logical manner.
Most/ly	Nearly all of the content which is expected has been included.
Narrow	Limited in terms of range. Only considers a few aspects.
Often	Most of the time with a few exceptions.
Partial/ly	To some extent, but not completely. Some key points are included, but others are missing.
Perceptive	Insightful, showing a deep level of understanding.
Persuasive	Influencing through reasoning.

Term	Definition
Pertinent	Considered and thoughtful approach in relation to the task/activity which demonstrates an astute understanding of contributing factors and/or links.
Precision	Use of accuracy and refinement to a method or process.
Professional	According to industry standards.
Range	The evidence presented is sufficiently varied to give confidence that the knowledge and principles are understood in application as well as in fact.
Realistic	Will work in a real setting.
Reasonable	Fair or moderate.
Reasoned/Reasoning	Justified, to understand and to make judgements based on practical facts.
Refine	Improve initial work, taking feedback into account.
Reflect	Think carefully and review information and/or performance – includes articulating ideas, concepts, activities, findings or features.
Relevant	Correctly focused on the activity. Applicable to the situation/context/task.
Review	Consider something formally in order to give an opinion on it based on appropriate evidence or information with the intention of instituting change if necessary.
Secure	Well-practised and confident in ability and skills.
Select	Choose the best or most suitable option related to specific criteria or outcomes.
Sensitivity	Understand and respond to needs and emotions.
Show	Present using practical skills.
Significant	Of a noticeably or measurably large amount or importance.
Simplistic	The work is composed of one part only, without elaboration/examples/details.
Some	A small amount or number of items, several items will be missing, list will be incomplete.
Specific	Relating directly to a particular area or subject.
State	Express something definitely or clearly.
Straightforward	To the point and easy to understand.
Sufficient	Meet the basic needs or requirements of a situation/context but with some limitations.
Suitable	Appropriate for a particular purpose.

Term	Definition
Summarise	Gather together all of the main aspects of a given situation or experience in a condensed format.
Superficial	Lacking depth of knowledge or understanding. Generic response, with no link to the task context.
Supported	Validated with evidence.
Systematically	Follows a method or procedure accurately, logically and in the correct order of process.
Tentative	Uncertain in approach or connection to the task or context.
Thorough	Comprehensive and extremely attentive to accuracy and detail.
Timely	Methods/techniques used when necessary/appropriate.
Unbalanced	All factors have not been considered in equal detail; some are considered in more detail than others.
Unclear	Not obvious or definite; ambiguous.
Unrealistic	Inappropriate to reality and will not work in a real setting.
Unsupported	Not verified or substantiated with evidence.
Well	To a high standard or degree of completion.
Wide range	Includes many relevant details, examples or contexts, thus avoiding a narrow or superficial approach; a broad approach taken to scope/scale; a comprehensive list of examples given.

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