Department for Education

Digital Systems and Data

Level 2 Foundation Certificate subject content

July 2026

Contents

1. Introduction

Foundation Certificates are qualifications that will be taken as part of the one-year Further Study pathway. They are level 2, high-quality qualifications that prepare students for progression to further study to all level 3 options, including V Levels, T Levels or A Levels. They are aimed at students who did not meet the provider's own entry requirements to progress directly from GCSE to level 3.

The Department does not set mandatory prior learning requirements for Foundation Certificates. Foundation Certificate content is set at level 2; providers may set their own entry requirements at level 2 and for progression to level 3, including any GCSEs required.

Foundation Certificate subject content sets out the national learning outcomes (LOs) and the knowledge, understanding and skills common to all Foundation Certificate qualification specifications in this subject.

This subject content is built on clear underlying principles, ensuring a consistent approach is taken across Foundation Certificates in all subjects.

Foundation Certificate overall content must be able to be taught within the range of 240-300 Guided Learning Hours (GLH). The size of each Foundation Certificate subject is determined through the content development process.

This subject content provides the framework within which the awarding organisations (AOs) create the detail of their qualification specification.

2. Aims

This subject content enables students to develop and apply knowledge, understanding and skills in work-related contexts. It provides students with a broad introduction to the subject that supports progression to further study at the various options at level 3 and apprenticeships.

Organisational scenarios used within the content should be varied and inclusive, and representative of the breadth of the sector. These scenarios should draw on examples from a range of sectors, local labour markets and organisational contexts, to ensure accessibility for all learners. Over reliance on prior experience or sector specific knowledge should be avoided.

The purpose of this qualification is to enable students to:

Apply their knowledge, understanding and skills to achieve the following:

- **Learning Outcome 1 (LO1)** Clean, interpret and visualise a dataset in order to answer a question and communicate findings clearly
- **Learning Outcome 2 (LO2)** Configure and secure digital systems by applying access, authentication and configuration measures
- **Learning Outcome 3 (LO3)** Plan, develop and test a programming solution in order to meet a brief
- **Learning Outcome 4 (LO4)** Plan and configure hardware and software components in order to deliver a functional digital system
- **Learning Outcome 5 (LO5)** Select and apply reliable digital sources to produce evidence-based recommendations for an intended purpose

Through these learning outcomes, students will develop transferable skills[1], including:

- planning - structured activities such as cleaning datasets, developing code, configuring systems and delivering digital systems by identifying steps, sequencing tasks, estimating resources and managing time

- data interpretation - data, systems and digital scenarios by organising information into types, identifying patterns and anomalies, deconstructing problems, and understanding how components interact

- problem solving - evaluating information, data, systems behaviour and AI-enabled outputs by questioning accuracy, weighing pros and cons, applying logical reasoning and reaching justified conclusions

[1] Please refer to the Framework for Transferable Skills and Work-related Behaviours, published alongside the subject content.

- communicating - findings, risks and recommendations clearly using written, visual and digital formats, adapting explanations and terminology to suit purpose and audience
- investigating - suitable digital sources, interrogating datasets, reviewing logs and dashboards, and designing and carrying out tests to confirm accuracy, function or security
- evidence-based decision-making - when selecting tools, configurations and solutions, assessing likely impact, and justifying recommended actions or improvements.
- self-managing - own performance by working through multi-stage tasks, monitoring progress, checking accuracy, responding to feedback and refining outcomes through testing and review.
- recording - information accurately by capturing, storing and organising digital content such as datasets, code, configurations, findings and documentation.
- evaluating - processes, evidence and outcomes by reviewing effectiveness, appraising accuracy and reliability, and making recommendations for improvement.
- observing - situational awareness by monitoring system outputs, data quality, error messages, logs and alerts to identify issues or abnormal behaviour

Students should continue to develop literacy, numeracy and digital skills through their application within the context of achieving the learning outcomes.

- students will develop literacy skills, including:
    - reading and interpreting technical information, briefs, datasets and digital documentation
    - using subject-specific and technical vocabulary accurately
    - recording processes, decisions and findings clearly in structured formats
    - summarising information, drawing conclusions and explaining reasoning
    - communicating findings, risks and recommendations clearly for different audiences
    - acknowledging and referencing digital sources appropriately
- students will develop numeracy skills, including:

    - interpreting numerical data, including totals, averages and proportions
    - identifying patterns, trends and anomalies within datasets
    - checking accuracy and consistency of numerical information
    - applying numerical reasoning to support conclusions, risk identification and troubleshooting
    - using quantitative evidence to justify recommendations and decisions
- students will develop essential digital skills, including:
    - using digital tools and applications to clean, interpret, visualise and present data
    - configuring hardware, software and network components securely
    - developing, testing and refining programming solutions
    - managing digital information by producing, organising, storing and retrieving content

Students will develop knowledge and understanding of the key theories and principles which support effective practice in the subject, including:

- data-informed and evidence-based practice, using accurate data, reliable sources and system information to support decisions, recommendations and improvements
- computational thinking, applying logical sequencing, pattern recognition, abstraction and problem-solving when analysing data, programming and configuring systems
- systems thinking, understanding how data, software, hardware and networks interact and how changes affect overall system performance
- secure-by-design principles, protecting confidentiality, integrity and availability through appropriate access control, authentication and configuration
- iterative development and testing, planning, testing, reviewing and refining solutions to improve accuracy, functionality and reliability
- automated and AI-enabled systems to support interpretation, coding, configuration and research, while maintaining human oversight, validation and professional responsibility
- responsible and ethical digital practice, handling data and security information appropriately, respecting privacy, verifying information and acknowledging sources

- clear, audience-appropriate communication, presenting findings, risks and recommendations clearly using written, visual and digital formats
- quality assurance and validation, checking accuracy, reviewing outputs (including AI-generated content), and ensuring solutions meet intended requirements
- efficient and sustainable digital practice, using digital tools, systems and resources effectively and responsibly

The aspects listed above are indicative of the scope and intent of the qualification and are not intended to be exhaustive.

2.1 Progression

Foundation Certificates aim to encourage student motivation and interest in progressing to further study in a relevant subject. They provide a broad and applied understanding of the sector that intentionally avoids narrow specialisation. This is to inform student choice about which further study option they want to pursue and the subject areas to specialise in, when they progress to the next level.

The content provides both a strong conceptual foundation for the subject and the basis for developing a deeper understanding, through applying knowledge, understanding and skills to achieve practical work-related Learning Outcomes.

This combination of theory and practice and the transferable skills students develop, will provide a stepping-stone that effectively prepares them for a wide range of related further study options. This may include progression to further study at level 3, including V Levels, T Levels or A Levels.

3. Subject Content

3.1 Guidance for awarding organisations

All content, unless specified otherwise, must be included in qualification specifications.

Lists of content which start with a colon ':'

This denotes that all the content in the list is compulsory and is expected to be included in awarding organisations' qualification specifications.

Lists of content which start with 'including'

This denotes that all the content in the list is compulsory and is expected to be included in awarding organisations' qualification specifications. The list is a minimum; awarding organisations can choose to add to the list. To ensure comparability between awarding organisations' qualification specifications in a subject, DfE will use this approach in limited instances where additional relevant content could reasonably be added without affecting the comparability of qualification specifications and assessments.

Use of 'e.g.'

This is used to exemplify what is meant by the content statement. It is used to ensure awarding organisations have a clear and consistent understanding of the term; to signal that the example in use now may be superseded by more up-to-date examples; or where different examples could reasonably be included without affecting the comparability of qualification specifications and assessments. Awarding organisations can use the cited example, where it remains relevant and appropriate.

3.2 Optionality

There are no optional or elective elements through which students can meet the mandatory minimum content required for this Foundation Certificate subject.

3.3 Content size

This Foundation Certificate subject content has been designed to be achievable in **300 GLH.**

3.4 Learning outcomes

Learning outcomes describe what students will be able to do after a period of learning.

We have set out, below each learning outcome, the knowledge and understanding and skills:

- knowledge and understanding - the theoretical facts, principles, concepts, and procedures that students should acquire
- skills - the subject-specific and transferable skills needed to achieve a learning outcome

Students are expected to apply knowledge, understanding and skills to demonstrate authentic work-related learning outcomes. Content specified is expected to be demonstrated through applied activity, rather than separately.

The subject content assumes no prior learning or qualification in the subject and introduces concepts from foundational level where required.

All students are to develop the knowledge, understanding and skills to be able to demonstrate all learning outcomes by the end of the programme, as the mandatory minimum content for this subject.

For each learning outcome, a rationale is provided for contextual explanation only. It is not part of the subject content that awarding organisations are required to include in their specifications.

References to work-related behaviours that may be demonstrated through engagement with each learning outcome have been signposted and may be set out by awarding organisations in specifications for teaching and learning but are not expected to be assessed.

The learning outcomes can be delivered independently of each other, or together in combination.

LO1 Clean, interpret and visualise a dataset in order to answer a question and communicate findings clearly

Rationale:

This learning outcome introduces students to the foundational practice of working with data, which underpins level 3 Digital pathways. By working with structured datasets, students clean, interpret and visualise data to answer defined questions, developing an understanding of how data is used to inform decisions within digital contexts. Working with clearly defined datasets provides an accessible scope while building stretch to level 3 study. This provides a coherent stepping-stone for progression to level 3, including T Levels, V Levels or A Levels, where students may engage with more complex data analysis and interpretation, modelling and decision-making.

The learning outcome also strengthens key transferable skills, including numeracy when working with totals, averages and proportions, literacy when communicating findings clearly, and digital skills when using tools to prepare and present data. Students develop confidence in identifying patterns, drawing conclusions and presenting information in a way that is appropriate to purpose and audience, reflecting expectations encountered in real-world digital contexts.

To do this, students are expected to apply the following knowledge and understanding:

- numerical, text, categorical and date or time data types
- digital data sources comprising spreadsheets, databases, survey outputs, online data repositories and system-generated reports
- the role of database structures and fields used to organise and retrieve structured data
- the effect of missing values, duplicate records, inconsistent formatting and incorrect data types on accuracy and interpretation
- the efficient use, storage and handling of data to support responsible and sustainable digital practices
- the role of graphical and tabular formats, including their use within infographics, in supporting interpretation and communication of findings
- the role of spreadsheet and data presentation tools, and automated and AI-enabled features in supporting interpretation and presentation of data
- the role of emerging digital technologies in shaping digital systems and services
- the contribution of clear written and visual communication when presenting findings

In working to achieve the learning outcome, students must be able to:

- format, clean and prepare digital datasets using spreadsheet and data presentation tools
- review datasets for accuracy and resolve missing values, duplicate records, inconsistent formatting and incorrect data types
- create tables and charts to represent data
- identify patterns and draw conclusions
- communicate findings clearly for an intended purpose

Transferable skills to be developed and demonstrated through this learning outcome include:

- analytical reasoning when identifying patterns and checking data accuracy
- recording information clearly when preparing data and presenting outputs
- clear communication when presenting findings through tables, charts and written explanations
- numeracy in interpreting totals, averages and proportions within datasets
- digital capability in manipulating and presenting data using appropriate tools

Work-related behaviours that may be demonstrated through engagement with this learning outcome, but not expected to be assessed, include:

- attention to detail
- persistent
- reliable

LO2 Configure and secure digital systems by applying access, authentication and configuration measures

Rationale:

This learning outcome introduces students to the foundational practice of configuring and securing digital systems, which underpins level 3 Digital pathways. By working with digital systems and network components, students configure systems, apply security measures, monitor system information, identify security weaknesses and respond appropriately to support the confidentiality, integrity and availability of data and services. Working with clearly defined digital environments provides an accessible scope while building stretch towards level 3 study.

This provides a coherent stepping-stone to level 3, including T Levels, V Levels and A Levels, where students may engage with more complex networking, cyber security, system administration, monitoring and incident response.

The learning outcome also strengthens key transferable skills, including problem solving when identifying weaknesses and selecting appropriate security measures, literacy when recording and communicating technical information clearly, and digital skills when configuring systems and using digital tools to monitor and investigate system activity. Students develop confidence in securing systems, recognising potential vulnerabilities and communicating appropriate actions, reflecting expectations encountered in real-world digital contexts.

To do this, students are expected to apply the following knowledge and understanding:

- the operation of digital networks through connected devices, infrastructure components and software governed by communication protocols
- communication between devices and connected systems within digital networks
- the meaning of confidentiality, integrity and availability in relation to protecting data, systems and services
- the causes and indicators of security weaknesses and risks arising from insecure access, weak authentication methods, unpatched software and misconfigured system or network settings
- authentication measures, access permissions, configuration settings and protective controls in securing digital systems
- the role of workplace policies and procedures in supporting secure system use and incident management: acceptable use policies, access control and authentication requirements, incident reporting and escalation procedures, data protection requirements, privacy and confidentiality requirements

- communication protocols, IP addressing conventions, secure configuration baselines and patch management practices in supporting secure and reliable digital systems
- the use of monitoring information, log files, dashboards and automated security tools in identifying potential weaknesses and supporting system security
- the role of digital tools, automated security scanning tools and AI-enabled systems in supporting secure configuration and identifying potential vulnerabilities, and the need to interpret, review and validate outputs before use
- health, safety and secure handling requirements when setting up, configuring or maintaining digital systems and equipment

In working to achieve the learning outcome, students must be able to:

- configure digital systems by applying secure configuration, authentication requirements, access controls, permissions, security settings and update procedures
- review log files, monitoring dashboards, system alerts and other security-related information to identify signs of unexpected or anomalous activity
- identify security weaknesses within digital systems and explain their potential impact on the confidentiality, integrity and availability of systems, devices and data
- apply or recommend appropriate actions that support security improvement, troubleshooting and protection of digital systems
- record and organise security-related information clearly and accurately using appropriate digital tools
- communicate security concerns, risks and recommended actions clearly for different audiences
- escalate potential cyber security concerns using defined workplace procedures
- handle security-related information in accordance with privacy, confidentiality and data protection requirements

Transferable skills to be developed and demonstrated through this learning outcome, include:

- problem solving when identifying security weaknesses and applying appropriate protective measures
- recording technical information clearly using structured digital documentation

- communication when explaining security risks and recommended actions
- digital capability in configuring digital systems and using digital tools to monitor and review security information

Work-related behaviours that may be demonstrated through engagement with this learning outcome, but not expected to be assessed, include:

- responsible
- perceptive
- attention to detail

LO3 Plan, develop and test a programming solution in order to meet a brief

Rationale:

This learning outcome introduces students to the foundational practice of developing programming solutions, which underpins level 3 Digital pathways. By working with defined problems and briefs, students plan, develop and test coded solutions, building an understanding of how structured logic and algorithms are used to produce digital outcomes. Working with clearly defined programming tasks provides an accessible scope while building stretch towards level 3 study. This provides a coherent stepping-stone to level 3 including T Levels, V Levels or A Levels, where students may engage with more advanced programming, automation and complex software development.

The learning outcome also strengthens key transferable skills, including problem solving when identifying and correcting errors, literacy when interpreting briefs and documenting solutions, and digital skills when using development tools to create and test code. Students develop confidence in structuring solutions, testing outcomes and explaining how their solution meets an intended purpose, reflecting expectations encountered in real-world digital contexts.

To do this, students are expected to apply the following knowledge and understanding:

- the stages of programming solution development and their role in meeting an intended purpose
- the role of algorithms as ordered instructions that determine solution behaviour
- the relationship between algorithms, program code and solution outputs
- the role of structured logic and algorithms in the design of digital solutions
- the use of developer-written and externally sourced code within digital solutions and the need to comply with licensing requirements
- the effect of logic errors, syntax errors and incorrect conditions on program behaviour
- the role of automated and AI-enabled tools in generating code suggestions, and the need to review, test and understand these outputs before use
- the role of testing approaches in confirming that programming behaves as expected

In working to achieve the learning outcome, students must be able to:

- plan a programming solution to meet a given brief

- develop a programming solution by writing and integrating code
- use appropriate software tools to run and test the code within a solution
- apply a logical, step-by-step approach when developing and refining code
- test the solution to confirm it produces the expected outcome
- identify and correct errors in code
- communicate outcomes clearly using concise explanations and structured documentation

Transferable skills to be developed and demonstrated through this learning outcome, include:

- problem solving when identifying errors and refining programming solutions
- planning and organisation when structuring and developing programming solutions
- communication in explaining solution behaviour and testing outcomes
- digital capability in developing, running and testing program code

Work-related behaviours that may be demonstrated through engagement with this learning outcome, but not expected to be assessed, include:

- persistent
- focused
- adaptable

LO4 Plan and configure hardware and software components in order to deliver a functional digital system

Rationale:

This learning outcome introduces students to the foundational practice of planning and configuring digital systems, which underpins level 3 Digital pathways. By working with hardware and software components, students plan tasks and configure systems to produce a functional digital system, developing an understanding of how components interact to meet defined purposes. Working with digital systems of defined scope provides an accessible context while building stretch towards level 3 study. This provides a coherent stepping-stone to level 3 including T Levels, V Levels or A Levels, where students may engage with more complex system integration and configuration, project delivery and maintenance practices.

The learning outcome also strengthens key transferable skills, including planning and organisation when sequencing tasks and managing resources, problem solving when identifying faults and adjusting configurations, and digital skills when configuring systems and verifying operation. Students develop confidence in producing functional outcomes and communicating configuration decisions clearly, reflecting expectations encountered in real-world digital contexts.

To do this, students are expected to apply the following knowledge and understanding:

- the role of planning tasks, sequencing activities and allocating resources when delivering a digital system
- the interaction between hardware and software components in enabling system functionality
- the role of user interface elements, accessibility and digital content in supporting the usability of a digital system
- the role of component compatibility and system requirements in configuring a functional digital system
- the influence of dependencies between components on overall system operation
- the occurrence of faults during configuration and operation and the need for checking, diagnosis and corrective action
- the contribution of maintenance activities comprising updates, checks and troubleshooting to continued system performance and reliability
- factors that affect the energy use, resource efficiency and sustainability of digital systems and devices

- the role of digital tools, automation features and automated AI-enabled systems in generating configuration and supporting system setup, and the need to check such outputs for suitability for the intended system

To enable students to achieve the learning outcome, students must be able to:

- plan and sequence tasks and resources to support delivery of a digital system
- configure hardware and software components to achieve a functional digital system
- verify system operation by checking that components function together as intended
- perform routine maintenance activities to support continued operation
- record and communicate configuration and maintenance activity clearly to others

Transferable skills to be developed and demonstrated through this learning outcome, include:

- planning and organisation in sequencing tasks and managing resources to deliver a digital system
- problem solving when identifying faults and adjusting configurations
- recording information accurately when documenting configuration and maintenance activity
- digital capability in integrating hardware and software components to achieve a functional system

Work-related behaviours that may be demonstrated through engagement with this learning outcome, but not expected to be assessed, include:

- organised
- flexible
- committed

LO5 Select and apply reliable digital sources to produce evidence-based recommendations for an intended purpose

Rationale:

This learning outcome introduces students to the essential research and evaluation practices that underpin all level 3 Digital pathways. This extends the data and information practices introduced in Learning Outcome 1. By identifying and assessing the reliability of digital sources, students develop the foundational skills needed to make evidence-based recommendations which are a core expectation across T Levels, V Levels and the level 2 Digital Apprenticeship Standard. Working with clearly defined online materials ensures that students can focus on recognising trustworthy information, checking accuracy, and selecting sources appropriate to a defined purpose. This provides a coherent stepping-stone for progression to level 3 including T Levels, V Levels or A Levels, where students will engage with more complex research, evaluation and evidence-based decision-making.

The learning outcome also strengthens key transferable skills: literacy (summarising information clearly, referencing sources), problem solving (judging credibility, comparing evidence), and digital skills (searching effectively, using digital applications to capture and organise findings). Students learn to justify their recommendations using evidence and to communicate their reasoning in a clear, audience-appropriate format.

To do this, students are expected to apply the following knowledge and understanding:

- variation in the reliability, accuracy, authority and purpose of digital information
- the role of comparing information across multiple sources in supporting accurate conclusions
- the influence of bias within digital information on interpretation and recommendations
- the potential for automated and AI-enabled content generation systems to produce inaccurate, misleading or fabricated information (sometimes referred to as hallucinated outputs), and the need to verify such information against reliable sources
- the importance of intellectual property rights, ownership, attribution and appropriate use of digital and AI-generated content
- the role of referencing practices in ensuring transparency and traceability of sources
- the role of workplace procedures governing acknowledgement and recording of information sources

In working to achieve the learning outcome, students must be able to:

- identify digital sources that are relevant to a defined purpose
- check information across sources to confirm key points
- select information that directly supports an evidence-based recommendation
- acknowledge and reference sources used
- communicate recommendations clearly, showing how evidence supports conclusions
- use search, formatting and checking functions within digital applications to support drafting, reviewing and organising information

Transferable skills to be developed and demonstrated through this learning outcome, include:

- research skills in locating and selecting relevant digital information
- analytical reasoning when comparing information across sources to support conclusions
- communication in presenting evidence-based recommendations clearly
- digital capability in organising information and referencing sources appropriately

Work-related behaviours that may be demonstrated through engagement with this learning outcome, but not expected to be assessed, include:

- perceptive
- reflective

Annex

Glossary of Terms

Term	Definition
Access control	The methods and rules used to determine which users, devices or systems are permitted to access data, systems or services, and the level of access they are allowed.
Access permission	A setting that controls which users, devices or systems are allowed to view, use or modify specific data, systems or services.
Algorithm	A defined sequence of instructions that a computer follows to process inputs and produce an output or solve a problem.
Artificial intelligence (AI)	Digital systems or tools that analyse data using algorithms or models in order to generate outputs such as predictions, insights, classifications or recommendations.
Authentication	A security process used to confirm the identity of a user, device or system before access to data, systems or services is granted.
Automated and AI-enabled systems	Digital tools or systems that use automated processes, artificial intelligence or both to generate, support or refine outputs.
Automation	The use of programmed instructions or scripts that allow digital systems to perform tasks or processes automatically with limited human intervention.
Availability	The condition in which information, systems or services are accessible and usable by authorised users when required.
Brief	A statement that defines a task, including its purpose, requirements, constraints and intended outcome.
Chart	A graphical representation of data used to show patterns, comparisons or relationships between values.
Code	Instructions written in a programming or scripting language that tell a computer how to perform specific tasks or operations.
Component	A hardware or software element that forms part of a larger digital system and contributes to its operation.
Confidentiality	The protection of information so that it is only accessible to authorised users and is not disclosed to unauthorised individuals or systems.

Term	Definition
Configuration	The process of setting or adjusting parameters in hardware or software so that a system operates correctly and securely for its intended purpose.
Control (security control)	A measure, safeguard or procedure designed to reduce risks to systems, services or data.
Dataset	A structured collection of related data items organised so that they can be stored, processed, analysed or presented.
Dependency	A relationship in which one component, process or service relies on another in order to function correctly.
Digital network	A group of connected devices and infrastructure that communicate with each other to exchange data and provide access to digital services.
Digital system	A set of connected components, including hardware, software, data, networks and users, which work together to deliver a digital function or service.
Digital tool	Software, application or digital feature used to support the completion of a task.
Error	A mistake or fault in code, data or configuration that causes a system or program to produce an incorrect or unexpected result.
Functional	Operating correctly and producing the intended result for a designed purpose.
Integrity	The accuracy, completeness and reliability of data, ensuring that information has not been altered in an unauthorised way.
Logical	Based on clear and ordered reasoning in which steps follow a defined and consistent sequence.
Maintenance	Activities such as updates, checks, repairs or adjustments carried out to ensure that systems continue to operate effectively.
Pattern	A repeated or noticeable relationship or trend within data.
Passphrase	A sequence of words used to verify identity and allow secure access to a system, device or service.
Protocol	A defined set of rules that governs how data is transmitted and received between devices or systems.
Program	A complete set of code that performs a specific function or set of tasks when executed by a computer.

Term	Definition
Programming	The process of designing, writing, testing and refining code to create a digital solution that meets a defined purpose.
Recommendation	A proposed course of action that is supported by analysis, evidence or evaluation.
Reliability (of a source)	The degree to which information from a source can be trusted as accurate, credible and appropriate for the intended purpose.
Risk	The possibility that an event or action may cause harm, loss or disruption to systems, data or services.
Secure handling	Managing data, devices or systems in ways that prevent unauthorised access, loss, misuse or disclosure.
Sequencing	Arranging tasks, instructions or steps in the correct logical order so that a process operates as intended.
Source (digital source)	A location from which information, data or code is obtained.
Test	An activity carried out to check whether a system, program or component behaves as expected.
Vulnerability	A weakness in a system, configuration, process or control that could be exploited to compromise security, functionality or reliability.
Visualise	To present information or data in graphical or pictorial form to support interpretation and understanding.

Content Mapping

Link to Level 2 Occupational Certificate core content

There is currently no Occupational Certificate in this subject area. This will be reviewed at a future date.

Mapping to Level 3 qualifications

The Level 2 Foundation Certificate content introduces foundational concepts and practices. Progression is characterised by increased complexity, independence and specialisation, moving from routine applications at Level 2 to occupationally relevant technical practice at Level 3.

Students progress from structured, clearly defined tasks at Level 2, to more independent work at Level 3, typically requiring students to interpret requirements, use judgement for informed decision-making and respond to a broader range of defined work-related contexts.

Link to V Levels

The following aspects of this Foundation Certificate content directly relate to content specified in the V Level Digital Systems and Data, to provide a stepping-stone and clear line of sight from level 2 to level 3 study:

Foundation Certificate reference	V Level reference	Knowledge and understanding	Skills
LO1: Data types and structured datasets	WRP1	Data structure, format, field definitions and levels of detail associated with datasets obtained from different sources.	Preparing datasets for analysis.
LO1: Data quality and preparation	WRP1	Data quality issues including missing data, duplicates and inconsistent formatting and their impact on analysis.	Validating and preparing datasets.
LO1: Data analysis methods	WRP1	Analytical techniques including sorting, filtering, grouping, calculating totals, averages and identifying trends.	Analysing data and identifying patterns.
LO1: Data presentation	WRP1	Forms and uses of analytical outputs and principles of visual communication.	Presenting analytical findings clearly.

Foundation Certificate reference	V Level reference	Knowledge and understanding	Skills
LO2: Digital system configuration	Core KU / WRP3	Configuration requirements relating to connectivity, storage, security settings and system behaviour.	Preparing, configuring and testing digital systems.
LO2: Authentication and access control	WRP2	Authentication requirements, access controls, user permissions and data protection measures.	Applying security protocols and configuration controls.
LO2: Security weaknesses, risks and vulnerabilities	Core KU / WRP2	Indicators of cyber security concerns, configuration related risks and system vulnerabilities.	Reviewing system information, identifying risks and responding appropriately.
LO2: Security impact and protective actions	WRP2	Implications of cyber threats, system vulnerabilities and delayed identification.	Applying protective actions and security procedures.
LO2: Security reporting and escalation	WRP2	Policies and procedures relating to incident reporting, privacy, confidentiality and secure handling of information.	Recording, communicating and escalating security concerns.
LO3: Algorithms and structured logic	WRP4	Principles of algorithms and structured coding approaches.	Structuring digital solutions using logical steps.
LO3: Program development	WRP4	Relationship between algorithms, program code and outputs.	Developing programming solutions using code.
LO3: Testing programming solutions	WRP4 and Core KU	Purpose of testing digital systems and role of quality assurance.	Testing and refining solutions and evaluating readiness.
LO4: Hardware and software interaction	Core KU	Relationship between system components and system behaviour.	Configuring system components to deliver functionality.
LO4: System testing and readiness	Core KU	Relationship between requirements, test outcomes and system readiness.	Verifying system performance and readiness.

Foundation Certificate reference	V Level reference	Knowledge and understanding	Skills
LO4: Technical fault identification	Core KU	Nature and causes of technical faults and structured diagnostic approaches.	Diagnosing faults and troubleshooting systems.
LO5: Reliability of digital information	WRP1	Data limitations, bias and reliability of datasets and sources.	Evaluating information sources.
LO5: Evidence-based conclusions	WRP1	Relationship between analysis, data quality and confidence in conclusions.	Drawing justified conclusions.
LO5: Communication of evidence	Core KU	Communication principles in technical and digital contexts.	Presenting evidence based recommendations.
LO5: Collaborative interpretation	Core KU	Role of collaboration and shared understanding in interpreting information.	Supporting decision making through shared analysis.

Link to T Levels

The Foundation Certificate prepares students for progression to multiple T Level qualifications including Digital Software Development, Digital Support and Security, and Digital Data Analytics, which builds on and extends into specialised technical knowledge and workplace application leading to roles in software development, cyber security, IT support and data analysis.

The following aspects of this Foundation Certificate content directly relate to content specified in the T Levels Digital systems and intelligence qualifications 'core' content, to provide a stepping-stone and clear line of sight from level 2 to level 3 study:

Foundation Certificate reference	T Level reference	Knowledge and understanding	Skills
LO1: Clean, interpret and visualise a dataset	Digital Data Analytics – Data preparation and analysis	Data types, structured datasets and data quality issues.	Preparing and validating datasets.
LO1: Clean, interpret and visualise a dataset	Digital Data Analytics – Data analysis and visualisation	Analytical techniques for identifying patterns and trends in data.	Analysing datasets and interpreting outputs.
LO1: Clean, interpret and visualise a dataset	Digital Data Analytics – Communication of insights	Use of charts, tables and summaries to communicate findings.	Presenting findings and insights to technical and non-technical audiences.
LO2: Configure and secure digital systems	Digital Support and Security – Digital environments and systems	Components of digital systems including devices, networks and software.	Configuring digital systems and connectivity.
LO2: Configure and secure digital systems	Digital Support and Security – Security protocols	Authentication methods, access permissions and secure configuration.	Applying security controls and monitoring system behaviour.
LO2: Configure and secure digital systems	Digital Support and Security – Cyber security awareness	Indicators of vulnerabilities or suspicious activity in digital systems.	Identifying and responding to potential security risks.

Foundation Certificate reference	T Level reference	Knowledge and understanding	Skills
LO2: Configure and secure digital systems	Digital Support and Security – Cyber security monitoring	Monitoring system activity to identify security weaknesses, vulnerabilities and anomalous behaviour	Reviewing system activity to identify weaknesses and risks.
LO2: Configure and secure digital systems	Digital Support and Security – Security procedures and escalation	Policies and procedures relating to privacy, confidentiality and incident reporting.	Recording, communicating and escalating cyber security concerns.
LO3: Plan, develop and test a programming solution	Digital Software Development – Programming and problem solving	Algorithms, structured logic and program design.	Structuring digital solutions and writing code.
LO3: Plan, develop and test a programming solution	Digital Software Development – Software development lifecycle	Planning, developing and testing coded solutions.	Developing and testing digital solutions.
LO4: Configure hardware and software to deliver a functional digital system	Digital Support and Security – System configuration and testing	Interaction between hardware, software and network components.	Configuring and testing digital systems.
LO4: Configure hardware and software to deliver a functional digital system	Digital Support and Security – Fault identification and system reliability	Technical faults affecting digital systems and diagnostic processes.	Troubleshooting and verifying system performance.
LO5: Select and apply reliable digital sources	Digital Data Analytics – Data reliability and governance	Reliability, bias and limitations of digital information and datasets.	Evaluating information sources.

Foundation Certificate reference	T Level reference	Knowledge and understanding	Skills
LO5: Select and apply reliable digital sources	Digital Software Development / Data Analytics – Decision making using digital information	Relationship between data, evidence and decision-making.	Communicating evidence-based conclusions.

Link to A Levels

The Foundation Certificate prepares students for progression to A Level in Computer Science, which extends into advanced level 3 topics not covered at Level 2, including algorithm efficiency, formal data structures, programming paradigms, Boolean algebra or database design, which provides clear differentiation between level 2 and A Level study.

The following aspects of this Foundation Certificate content directly relate to content specified in the A Level computer science qualification, to provide a stepping-stone and clear line of sight from level 2 to level 3 study:

Foundation Certificate reference	A Level reference	Knowledge and understanding	Skills
LO1: Data cleaning and visualisation	Data representation	Data types: numerical, categorical, text and date/time data.	Interpreting datasets; recognising patterns; applying numeracy in digital contexts.
LO1: Data cleaning and visualisation	Data management	Methods of capturing, selecting and managing data to produce information.	Organising and preparing datasets for analysis.
LO1: Data cleaning and visualisation	Computational thinking	Interpreting patterns and relationships in data.	Analytical reasoning; drawing conclusions from data.
LO1: Data cleaning and visualisation	Communication of information	Presenting data using tables and charts.	Communicating findings clearly using visual and written formats.
LO2: Networks and security configuration	Computer systems architecture	Role of devices, infrastructure components and software in digital networks.	Configuring digital systems and devices.
LO2: Networks and security configuration	Networks and protocols	Characteristics of networks and the role of communication protocols.	Understanding system connectivity and communication.
LO2: Networks and security configuration	Cybersecurity fundamentals	Confidentiality, integrity and availability of data and services.	Identifying risks and applying security controls.

Foundation Certificate reference	A Level reference	Knowledge and understanding	Skills
LO3: Planning, developing and testing a programming solution	Fundamentals of programming	Relationship between algorithms, program code and solution outputs.	Designing program logic and structured solutions.
LO3: Planning, developing and testing a programming solution	Algorithms	Algorithms as ordered instructions to solve problems.	Computational problem solving and logical reasoning.
LO3: Planning, developing and testing a programming solution	Program development	Debugging and correcting syntax and logic errors.	Testing and refining code.
LO3: Planning, developing and testing a programming solution	Software development process	Planning, writing and testing a coded solution.	Applying structured development processes.
LO4: Configuring hardware and software systems	Computer systems	Interaction between hardware and software components.	Configuring systems to achieve a functional and efficient digital system.
LO5: Evidence based recommendations	Computational thinking and problem solving	Reliability, bias and evaluation of information.	Evaluating evidence and justifying conclusions.

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