T Level Technical Qualification in Digital Support Services

Employer-set project (ESP)

Core skills

Digital Support

Mark scheme

v1.2: Specimen assessment materials
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Contents

Marking guidelines

General guidelines

You must apply the following marking guidelines to all marking undertaken throughout the marking period. This is to ensure fairness to all students, who must receive the same treatment. You must mark the first student in exactly the same way as you mark the last:

- the mark scheme must be referred to throughout the marking period and applied consistently. Do not change your approach to marking once you have been standardised
- reward students positively giving credit for what they have shown, rather than what they might have omitted
- utilise the whole mark range and always award full marks when the response merits them
- be prepared to award zero marks if the student's response has no creditworthy material
- do not credit irrelevant material that does not answer the question, no matter how impressive the response might be
- the marks awarded for each response should be clearly and legibly recorded in the grid on the front of the question paper
- if you are in any doubt about the application of the mark scheme, you must consult with your team leader or the chief examiner

Guidelines for using extended response marking grids

Extended response marking grids have been designed to award a student's response holistically for the relevant task or question and should follow a best-fit approach. The grids are broken down into levels, with each level having an associated descriptor indicating the performance at that level. You should determine the level before determining the mark.

When determining a level, you should look at the overall quality of the response and reward students positively, rather than focussing on small omissions. If the response covers aspects at different levels, you should use a best-fit approach at this stage and use the available marks within the level to credit the response appropriately.

When determining a mark, your decision should be based on the quality of the response in relation to the descriptors. Standardisation materials, marked by the chief examiner, will help you with determining a mark. You will be able to use exemplar student responses to compare to live responses, to decide if it is the same, better or worse.

To support your judgement, the indicative content is structured in such a way that mirrors the order of the different points within the band descriptors. This will allow you to use the 2 in conjunction with each other by providing examples of the types of things to look for in the response, for each descriptor. In other words, the indicative content provides you with a starting point of possible examples and the bands express the range of options available to you in terms of the quality of the response. You should apply the standards that have been set at relevant standardisation event in a consistent manner.

You are reminded that the indicative content provided under the marking grid is there as a guide, and therefore you must credit any other suitable responses a student may produce. It is not a requirement either that students must cover all of the indicative content to be awarded full marks.

For some tasks, there is more than one piece of assessment evidence required. Whilst they are interconnected, markers should assess each piece of assessment evidence in its own right using the appropriate mark scheme to inform the marks awarded.

Task 1

This task requires students to submit 2 pieces of assessment evidence. Whilst they are linked in terms of the task scenario, they should be marked independently of each other using the marking grids and indicative content detailed below.

Task 1: troubleshooting document

Band	Mark	Descriptor
3	5–6	The student provides a response to the task that: • demonstrates an excellent understanding of troubleshooting with a highly logical structure, including a wide range of highly relevant steps that may be used to identify the computer faults that are comprehensive and highly detailed • demonstrates an excellent understanding of the troubleshooting process by showing expected results of troubleshooting steps that are comprehensive and highly detailed
2	3–4	The student provides a response to the task that: • demonstrates a reasonable understanding of troubleshooting with some logical structure, including some relevant steps that may be used to identify the computer faults that have some detail, though they may be underdeveloped • demonstrates a reasonable understanding of the troubleshooting process by showing expected results of troubleshooting steps that have some detail, though they may be underdeveloped
1	1–2	The student provides a response to the task that: • demonstrates a limited understanding of troubleshooting with minimal structure, including a minimal range of steps that may lack relevance to identify the computer faults and have minimal detail • demonstrates a limited understanding of the troubleshooting process by showing expected results of troubleshooting steps that have minimal detail
	0	No creditworthy material.

Indicative content

The document is structured and may include:

- user details
- test dates
- proposed tests (examples detailed below)
- expected outcomes of tests
- ability to record changes based on test outcomes

- record of diagnosis

Students may propose a range of steps in the troubleshooting document such as:

- Ping
- Ipconfig
- network properties

The expected outcomes of the troubleshooting steps will vary depending on the steps proposed by the student, but these may include:

- Ping error – destination host unreachable
- Ipconfig shows DHCP not in use/IP Address is not as expected
- network properties Shows DHCP not in use

Note: this list is not exhaustive; please credit any other valid tests the student may recommend.

Task 1: test plan document

Band	Mark	Descriptor
4	13–16	The student provides a response to the task that: • has an excellent design with a highly logical structure that includes a wide range of elements and/or appropriate steps to test the suggested changes have resolved the fault • demonstrates an excellent understanding of faults (in relation to the scenario of the brief), supported by an excellent range of highly relevant tests • demonstrates an excellent understanding of testing (in relation to the scenario of the brief), supported by a comprehensive and highly detailed explanation of expected outcomes
3	9–12	The student provides a response to the task that: • has a good design with a mostly logical structure that includes most elements and/or appropriate steps to test the suggested changes have resolved the fault • demonstrates a good understanding of faults (in relation to the scenario of the brief), supported by a good range of mostly relevant tests • demonstrates a good understanding of testing (in relation to the scenario of the brief), supported by a clear and mostly detailed explanation of expected outcomes

Band	Mark	Descriptor
2	5–8	The student provides a response to the task that: • has a reasonable design with some logical structure, though this may be underdeveloped, that includes most elements and/or appropriate steps to test the suggested changes have resolved the fault • demonstrates a reasonable understanding of faults (in relation to the scenario of the brief), supported by a reasonable range of some relevant tests (though may include some inappropriate tests) • demonstrates a reasonable understanding of testing (in relation to the scenario of the brief), supported by an explanation of expected outcomes that has some detail, though this may be underdeveloped
1	1–4	The student provides a response to the task that: • has a limited design with minimal structure that includes minimal elements and/or appropriate steps to test the suggested changes have resolved the fault • demonstrates a limited understanding of faults (in relation to the scenario of the brief), supported by a limited range of mostly irrelevant tests • demonstrates a limited understanding of testing (in relation to the scenario of the brief), supported by a minimal explanation of expected outcomes with limited detail
	0	No creditworthy material.

Indicative content

Students may make different decisions when designing their test plan. Credit should be given for the clarity and appropriateness of the outlined steps in relation to the brief.

The test plan design features may include:

- consistent formatting
- the structure is clear and easy to understand, for example fonts are readable
- simple list
- appropriate use of tables to lay out tests/expected results/actual results to be easily understood which may include fields such as:
  - user details
  - test dates
  - proposed tests
  - expected outcomes of tests
  - ability to record changes based on test outcomes
  - user acceptance of work completed
- diagrams/charts, such as internet/beep code

The actual fault (as signified by the beep code) is a hardware fault (memory failure).

Students may propose a range of different steps to test the suggested changes have resolved the fault. When considering placement within the bands, consideration should be given to the appropriateness of the selected tests in context of the actual fault. The types of tests proposed by students may include:

- run diagnostic tool
- swap RAM module
- reseating RAM
- reseating cables
- power cycle
- confirmation the computer boots correctly
- confirmation that files and applications open correctly
- anti-virus/malware scan result
- confirmation that network features are working correctly (web browser/email)

The expected outcomes of tests will vary depending on the types of tests proposed by students, but these may include:

- computer boots and loads operating system correctly
- applications run correctly and files open
- scans show clean results
- connection to the internet is stable

Note: this list is not exhaustive; please credit any other valid tests the student may recommend.

Task 2

This task requires students to submit 2 pieces of assessment evidence. Whilst they are linked in terms of the task scenario, they should be marked independently of each other using the marking grids and indicative content detailed below.

Note: Tasks 2, 3 and 4 assess English skills holistically. The AO4 English skills mark scheme is detailed after task 4, though it may be useful to refer to the mark scheme whilst assessing the tasks to support an appropriate, holistic judgement.

Task 2: interview

Band	Mark	Descriptor
3	5–6	The student provides a response to the task that: • demonstrates an excellent application of communication techniques when working with stakeholders to address specific requirements (in relation to the scenario of the brief) • demonstrates an excellent understanding of root cause analysis by constructing interview questions that are highly logical, highly relevant and facilitate a comprehensive gathering of information on the issues (in relation to the scenario of the brief)
2	3–4	The student provides a response to the task that: • demonstrates a reasonable application of communication techniques when working with stakeholders to address specific requirements (in relation to the scenario of the brief) • demonstrates a reasonable understanding of root cause analysis by constructing interview questions that have some logic, some relevance and facilitate some gathering of information on the issues (in relation to the scenario of the brief), though these may be underdeveloped
1	1–2	The student provides a response to the task that: • demonstrates a limited application of communication techniques when working with stakeholders to address specific requirements (in relation to the scenario of the brief) • demonstrates a limited understanding of root cause analysis by constructing interview questions that have minimal logic, minimal relevance and facilitate minimal gathering of information on the issues (in relation to the scenario of the brief)
	0	No creditworthy material.

Indicative content

The recorded interview shows the student questioning the network manager.

The student's communication technique, as well as their ability to respond to information they receive during the interview, should be considered.

The communication techniques demonstrated by the response may include:

- active listening
- use of open questioning

- negotiation
- use of clear and concise language (for example terminology based on audience)

The questions asked by students will demonstrate their ability to analyse the key issues, in relation to the brief. Credit should be given for the quality of the questions asked in terms of how it helps to identify the root cause.

- questions related to the current network:
    - what operating systems are currently in use across the business?
    - what productivity software is currently in use?
    - what other software is running on computers?
    - what controls are in place to limit users' actions on the current computers?
    - what are the key problems occurring due to installed software?

- questions related to requirement gathering:
    - how do you see the IT team working to install software across all computers?
    - what resources would you like to be able to access that you cannot currently?
    - do all users need to be using the same operating system moving forwards?
    - what type of security software would you like running on the computers?

Note: the above is not an exhaustive list; credit should be given to other questions which illicit an appropriate response.

Task 2: emails

Band	Mark	Descriptor
3	5–6	The student provides a response to the task that: • demonstrates an excellent understanding of how to communicate to different audiences in a digital support services context, this is supported by sustained application of relevant technical terminology (for the technical audience), and is contextualised (for the non-technical audience) in a comprehensive and highly detailed way • demonstrates an excellent application of analytical thinking and problem solving that identifies a wide range of issues, in relation to the scenario of the brief, in a comprehensive and highly detailed way
2	3–4	The student provides a response to the task that: • demonstrates a reasonable understanding of how to communicate to different audiences in a digital support services context, this is supported by some application of relevant technical terminology (for the technical audience), and contextualised (for the non-technical audience) with some detail • demonstrates a reasonable application of analytical thinking and problem solving that identifies some of the issues, in relation to the scenario of the brief, with some detail, though this may be underdeveloped
1	1–2	The student provides a response to the task that: • demonstrates a limited understanding of how to communicate to different audiences in a digital support services context, this is supported by minimal or no application of relevant technical terminology (for the technical audience), and is contextualised (for the non-technical audience) in a superficial way • demonstrates a limited application of analytical thinking and problem solving that identifies a minimal range of issues, in relation to the scenario of the brief, that has minimal detail
	0	No creditworthy material.

Indicative content

The 2 emails communicate to different types of audiences within a digital support services context. Credit should be given for how the student uses technical terminology according to the intended audience. Different types of communication methods may include:

- informal or formal writing styles
- appropriate language used for the relevant audience
- technical email:
    - more direct, uses technical terminology and acronyms appropriately, for example lack of a directory service such as active directory provides lack of consistency across all workstations including inconsistent user accounts and lack of application management
- non-technical email

- more straightforward, descriptive of concepts and avoids technical jargon, for example lack of a centralised server means there is a lack of consistency when users log into the network, it also means we have little control over installed applications and keeping them up to date

Credit should be given to the appropriateness and number of the issues discussed. Potential issues, as related to the scenario, that may be identified through the application of analytical thinking and problem solving may include:

- inconsistent use of operating systems across the business
- older software in use bringing inherent security issues
- possibility of out-of-date anti-virus software on computers
- compatibility issues between files generated on different computers
- lack of central management and accountability of computers

Note: this is not an exhaustive list; other concerns may be identified.

Task 3

Alongside the main assessment evidence (project proposal), task 3 assesses mathematics skills. The AO4 mathematics skills mark scheme is detailed after task 3.

Note: Tasks 2, 3 and 4 assess English skills holistically. The AO4 English skills mark scheme is detailed after task 4, though it may be useful to refer to the mark scheme whilst assessing the tasks to support an appropriate, holistic judgement.

Band	Mark	Descriptor
5	20–24	The student provides a response to the task that: • demonstrates an excellent understanding of the computer setup and software issues (in relation to the scenario of the brief) that is comprehensive and highly detailed • demonstrates an excellent understanding of how to resolve the computer setup and software issues and address needs (in relation to the scenario of the brief) that is comprehensive and highly detailed • makes judgements on the equipment, software and/or cloud services and associated costs to meet needs (in relation to the scenario of the brief) that are comprehensive and highly relevant • demonstrates an excellent understanding of associated cyber security issues and how they could be mitigated (in relation to the scenario of the brief) that is comprehensive and highly detailed
4	15–19	The student provides a response to the task that: • demonstrates a good understanding of the computer setup and software issues (in relation to the scenario of the brief) that is clear and mostly detailed • demonstrates a good understanding of how to resolve the computer setup and software issues and address needs (in relation to the scenario of the brief) that is clear and mostly detailed • makes judgements on the equipment, software and/or cloud services and associated costs to meet needs (in relation to the scenario of the brief) that are clear and mostly relevant • demonstrates a good understanding of associated cyber security issues and how they could be mitigated (in relation to the scenario of the brief) that is clear and mostly detailed

Band	Mark	Descriptor
3	10–14	The student provides a response to the task that: • demonstrates a reasonable understanding of the computer setup and software issues (in relation to the scenario of the brief) that has some detail, though this may be underdeveloped • demonstrates a reasonable understanding of how to resolve the computer setup and software issues and address needs (in relation to the scenario of the brief) that has some detail, though this may be underdeveloped • makes judgements on the equipment, software and/or cloud services and associated costs to meet needs (in relation to the scenario of the brief) that have some relevance • demonstrates a reasonable understanding of associated cyber security issues and how they could be mitigated (in relation to the scenario of the brief) that has some detail, though this may be underdeveloped
2	5–9	The student provides a response to the task that: • demonstrates a basic understanding of the computer setup and software issues (in relation to the scenario of the brief) that is sometimes unclear and lacks detail • demonstrates a basic understanding of how to resolve the computer setup and software issues and address needs (in relation to the scenario of the brief) that is sometimes unclear and lacks detail • makes judgements on the equipment, software and/or cloud services and associated costs to meet needs (in relation to the scenario of the brief) that are sometimes unclear and irrelevant • demonstrates a basic understanding of associated cyber security issues and how they could be mitigated (in relation to the scenario of the brief) that is sometimes unclear and lacks detail
1	1–4	The student provides a response to the task that: • demonstrates a limited understanding of the computer setup and software issues (in relation to the scenario of the brief) that is mostly unclear with minimal detail • demonstrates a limited understanding of how to resolve the computer setup and software issues and address needs (in relation to the scenario of the brief) that is mostly unclear with minimal detail • makes judgements on the equipment, software and/or cloud services and associated costs to meet needs (in relation to the scenario of the brief) that are mostly unclear and irrelevant • demonstrates a limited understanding of associated cyber security issues and how they could be mitigated (in relation to the scenario of the brief) that is mostly unclear with minimal detail
	0	No creditworthy material.

Indicative content

The computer and software issues present within the scenario may be caused by several factors, credit should be given for the range and depth of the detail provided.

The potential computer and software issues discussed may include:

- out-of-date operating systems with no vendor update support
- variations in OS and software making support more complex
- compatibility issues sharing files between users
- lack of centralised control of computers
- potential licensing issues due to unauthorised software
- slow and complicated process to set up user computers
- inconsistent or non-existent malware/virus protection

Students may provide a range of different options to resolve the computer and software issues. When considering placement within the bands, consideration should be given to the appropriateness and number of the issues discussed. Potential issues may include:

- consistent operating systems across all computers
- standardised software across all computers
- use of a deployment server and strategy to automate installation across all computers
- introduction of a consistent endpoint protection solution to ensure up-to-date anti-malware software and central management of it
- cloud-based solutions such as Microsoft 365 or Google Docs
- capable students may well provide a diverse solution that utilises products from multiple vendors depending on use in the business (for example, Windows-based PCs for most users but Apple computers for design staff)

Students may make different decisions when proposing different equipment, software or cloud-based services. Credit should be given for the strength of their decisions and justifications.

Possible judgements may include:

- installation of Windows 10 Professional or Enterprise across all computers:
    - easier to manage and support a standardised build
    - only authorised software is included in the build
- creation of a standardised Windows image (or images) and deployment through WDS
- use of Microsoft 365 to provide productivity software/email/cloud-based storage
- installation of a full endpoint protection solution to force antivirus and antimalware compliance across all computers
- introduction of a server domain controller for authentication
- removal of local administrator rights for users

Costing decisions will vary as students may offer different proposals to resolve the issues. However, costings should be included (please also assess mathematics skills and refer to the AO4 mark scheme, detailed below, to inform judgement) and may include:

- subscription costs for cloud-based solutions (for example, Microsoft 365)
- capital costs for new or updated computers or servers
- software licensing costs for software such as endpoint protection software

Students may provide different cyber security considerations based on their decisions. Possible cyber security and mitigations may include:

- cyber security: users have local administrative rights on workstations
    - mitigation: introduction of centralised authentication through active directory and removal of local admin permissions for end users
- cyber security: lack of malware and antivirus software on local clients
    - mitigation: introduction of an endpoint protection solution to centrally manage antivirus updates on client computers
- cyber security: out of date operating system with no control on updates being applied
    - mitigation: introduction of WSUS server and centralised policies through GPOs

Security issues and considerations that may include but are not limited to:

- out of date anti-virus software/lack of software
- lack of centralised control
- staff able to install own software on PCs
- lack of control with software licensing
- out of date operating systems with no security patches being produced
- varied operating systems providing training issues
- unauthorised software/games installed on computers

Note: this is not an exhaustive list; credit should be given to other suggestions as appropriate.

Task 3: Mathematics skills (AO4)

Band	Mark	Descriptor
2	2	Mathematics skills presented in the task: • demonstrate a good understanding of numeracy skills which show accurate calculations and appropriate units
1	1	Mathematics skills presented in the task: • demonstrate a basic understanding of numeracy skills with calculations that may sometimes be inaccurate with some inappropriate units
0	0	No creditworthy material.

Indicative content

The project proposal includes costings for the proposed equipment as proposed by the student.

Task 4

This task requires students to submit 2 pieces of assessment evidence. Whilst they are linked in terms of the task scenario, they should be marked independently of each other using the marking grids and indicative content detailed below.

Note: tasks 2, 3 and 4 assess English skills holistically. The AO4 English skills mark scheme is detailed after task 4, though it may be useful to refer to the mark scheme whilst assessing the tasks to support an appropriate, holistic judgement.

Task 4: testing method - audience testing (sample satisfaction survey)

Band	Mark	Descriptor
3	5–6	The student provides a response to the task that: • demonstrates an excellent understanding of testing methods, in relation to the scenario of the brief, that could measure the effectiveness of the solution in a comprehensive and highly detailed way
2	3–4	The student provides a response to the task that: • demonstrates a reasonable understanding of testing methods, in relation to the scenario of the brief, that could measure the effectiveness of the solution that has some detail, though this may be underdeveloped
1	1–2	The student provides a response to the task that: • demonstrates a limited understanding of testing methods, in relation to the scenario of the brief, that could measure the effectiveness of the solution in a minimal and superficial way
	0	No creditworthy material.

Indicative content

The required testing method for this task focuses on audience testing in the form of a sample satisfaction survey.

Credit should be given for the ability of the questions to determine whether the functionality fulfils the desired outcomes, as well as, user satisfaction with the new network.

Students may include a range of questions with different areas of focus, such as:

- questions to measure customer satisfaction:
  - how satisfied are you with the new network setup?
  - how would you rate the ease of use when accessing resources?
  - following the upgrade, how easy do you find your computer to use?
  - are you able to access the files and folders you need with the updated system?
  - how efficient is the performance of your updated computer?
  - what software (if any) would you like to see included in future updates?
  - how efficient was the upgrade process for you?
- questions to measure system performance:
  - how would you rate the usability of your computer?
  - are you able to connect to all resources you require?
  - how would you rate the compatibility of your software?

- questions to understand the customer:
  - what is your job role?
  - how would you rate your technical ability?

Task 4: project summary

Band	Mark	Descriptor
3	5–6	The student provides a response to the task that: • demonstrates an excellent understanding of the key issues, solutions, health and safety, and security factors (in relation to the scenario of the brief), supported by sustained application of relevant technical terminology appropriate for a technical audience • evaluates their own performance throughout the project in an excellent and highly detailed manner, supported by excellent explanations of actions taken and proposed solutions (in relation to the scenario of the brief)
2	3–4	The student provides a response to the task that: • demonstrates a reasonable understanding of the key issues, solutions, health and safety, and security factors (in relation to the scenario of the brief), supported by some application of relevant technical terminology appropriate for a technical audience • evaluates their own performance throughout the project in a reasonable manner with some detail, though this may be underdeveloped, supported by reasonable explanations of actions taken and proposed solutions (in relation to the scenario of the brief)
1	1–2	The student provides a response to the task that: • demonstrates a limited understanding of the key issues, solutions, health and safety, and security factors (in relation to the scenario of the brief), supported by minimal or no application of relevant technical terminology appropriate for a technical audience • evaluates their own performance throughout the project in a limited and superficial manner, supported by limited explanations of actions taken and proposed solutions (in relation to the scenario of the brief)
	0	No creditworthy material.

Indicative content

The project summary consolidates the key aspects of the project and may include:

- the key problem present in the scenario
- proposed solution such as:
  - consistent operating systems across all computers
  - standardised software across all computers
  - use of a deployment server and strategy to automate installation across all computers

  - introduction of a consistent endpoint protection solution to ensure up-to-date anti-malware software and the central management of it
  - cloud-based solutions such as Microsoft 365 or Google Docs
  - capable students may well provide a diverse solution that utilises products from multiple vendors depending on use in the business (for example, Windows-based PCs for most users but Apple computers for design staff)
- mitigations used throughout the project
- relevant security issues, such as:
  - lack of consistent virus/malware protection
  - end users having access to administrative permissions allowing installation of unauthorised software and providing high-level threat if an account is compromised

Students may evaluate their own performance in a range of ways, this may include:

- discussion of strengths and weaknesses, as relevant to their own choices
- application of relevant reflective models, such as Gibbs' Reflective Cycle

Note: the above is not an exhaustive list; credit should be given to other appropriate evaluative approaches.

Task 2, 3 and 4: English skills (AO4)

Band	Mark	Descriptor
4	4	English skills presented in the tasks: • demonstrate an excellent understanding of spelling, punctuation and grammar that is fully accurate • demonstrate an excellent ability to convey meaning in a fully clear and coherent manner
3	3	English skills presented in the tasks: • demonstrate a good understanding of spelling, punctuation and grammar that is mostly accurate • demonstrate a good ability to convey meaning in a mostly clear manner
2	2	English skills presented in the tasks: • demonstrate a reasonable understanding of spelling, punctuation and grammar that has some accuracy, though errors may be present • demonstrate a reasonable ability to convey meaning, though at times this may not be fully clear
1	1	English skills presented in the tasks: • demonstrate a limited understanding of spelling, punctuation and grammar that is mostly inaccurate • demonstrate a limited ability to convey meaning in a mostly unclear manner
0	0	No creditworthy material.

Indicative content

The student has submitted emails, a project proposal, survey and project summary. A holistic judgement should be made in terms of the quality of English skills throughout tasks 2, 3 and 4.

English skills may include:

- identifying relevant information from the brief and organising writing into an appropriate format (for example, paragraphs, bullet points)
- conveying meaning and information clearly and effectively, supported by language which is appropriate for the audience (for example, team leader/facilities manager – formal language)
- constructing complex sentences consistently and accurately
- using correct spelling, grammar and punctuation

Document information

The T Level Technical Qualification is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Post approval, updated for publication.		December 2020
v1.1	Branding and formatting final updates. NCFE rebrand.		September 2021
v1.2	Sample added as a watermark	November 2023	15 November 2023