

Cambridge **TECHNICALS LEVEL 2**

**IT**

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**Unit 3**

**Building IT systems**

**Model assignment**

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Please note:

You can use this assignment to provide evidence for summative assessment, which is when the learner has completed their learning for this unit and is ready to be assessed against the grading criteria.

You can use this assignment as it is, or you can modify it or write your own; we give more information in this document under Guidance for tutors.

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# Guidance for tutors on using this assignment

## General

OCR Cambridge Technical model assignments are available to download from our website: [www.ocr.org.uk](http://www.ocr.org.uk).

The purpose of this assignment is to provide a scenario and model of tasks that are typical of how an IT support technician would participate in the design, development and testing of an IT system, to enable you to assess your learner against the requirements specified in the grading criteria. The scenario and its tasks are intended to give a work-relevant reason for applying the skills, knowledge and understanding needed to achieve the unit.

This assignment will not instruct learners how to meet the highest grade. Whether learners achieve a pass, merit or distinction will depend on what evidence they produce.

You can modify the scenario we provide in this assignment to make it more relevant to your local or regional needs. Please refer to the information under 'Modifying the model assignment' later in this section.

You don't have to use this assignment. You can use it as a guide to help you to design your own assignment, and we provide an assignment checking service. You'll find more information on these matters in section 8 of the qualification handbook.

In the tasks, we'll refer to the format of evidence. Learners are **not** required to follow that format **unless** we tell them otherwise.

It's essential that the work every learner produces is their own. Please make sure you read through the information we give on authenticity in section 8 of the qualification handbook and make sure that your learners and any staff involved in assessment understand how important authenticity is.

**We provide this assignment to be used for summative assessment. You must not use it for practice or for formative assessment.**

## Before using this assignment to carry out assessment

Learners will need to take part in a planned learning programme that covers the knowledge, understanding and skills of the unit.

When your learners are ready to be assessed, they must be provided with a copy of the following sections of this assignment:

- General information for learners
- Assignment for learners
- Evidence Checklist

They may carry out preparation prior to undertaking the tasks and there is no time limit for this.

# When completing the assignment

**You should use this assignment in conjunction with the unit specification and qualification handbook.**

This assignment can take between 10 and 14 hours depending on the depth of design work learners are asked to provide by the tutor or the complexity of the learners proposed IT systems which will need to be built and tested.

It is suggested that tutors review the learners proposed IT systems created within Task 2, to ensure that Task 3 will be accomplished within a reasonable time period.

Evidence formats have been suggested for each task. However, for the more practical elements of the assignment i.e. Task 3 and Task 4, learners may find the use of pictures or video a more useful and efficient method of evidence collection, providing the required criteria has been met.

## Information to support the scenario/tasks

Care should be taken not to confuse Task 2 and Task 3. Task 2 requires the learners to design an IT system and explain how the proposed IT system will meet the needs of the client or the end user using the topics stated in the teaching content. Task 2 should not be an itemised breakdown of the required hardware and software for the IT system.

Task 3 is when the learners are now asked to select and itemise the required hardware and software needed to physically build the IT system. Learners must clearly explain the hardware and software choices they have made and justify suitability of each component in terms of being 'fit for purpose'.

To help learners further develop their understanding of this assignment, especially relating to Task 2, Task 3 and Task 4, it is suggested that the involvement of a guest speaker would be of value. This may be in the form of the local network manager, or an external expert, who could present a practical perspective into the design, development and acceptance testing of proposed IT systems.

It may also be beneficial for the guest speaker to discuss the subject of customer expectation, involvement and satisfaction and the impact that this may have on IT system projects.

This is an opportunity to source meaningful employer involvement (MEI) which can be evidenced as part of the IT Technical Practitioner pathway.

## Resources to complete the tasks

There are resource requirements for this assignment. Every learner will need access to the following resources:

For Task 3 learners will need to be able to select the hardware and software components that will enable them to build the system in Task 4 that reflects the IT system they proposed in Task 2.

It should be noted that all of the software required to successfully complete this assignment is available online as open source software or freeware.

## Health and safety and the use of resources

For Task 4 learners are being asked to install the hardware for the IT system.

Guidance and training should be provided to learners regarding the correct use of any necessary safety equipment and the precautions that should be taken when working on potentially live electrical equipment.

Learners should also be provided with any appropriate safety equipment that may be required for the task e.g. safety glasses, anti-static straps/mats and insulated tools.

## Time

You should plan for learners to have 10–14 hours to complete this assignment.

Learners must be allowed sufficient time to complete all the tasks. The amount of time may vary depending on the nature of the tasks and the ability of individual learners. To help with your planning against each of the tasks we've given an indication of how long it should take.

Learners can produce evidence in several sessions.

## Format of evidence

Learners have to produce evidence that demonstrates how they have met the grading criteria. At the very least they must produce evidence that meets **all** of the pass criteria.

**Please make sure your learners realise that missing just one pass criterion means they will not pass the unit, even if they have successfully met the merit and distinction criteria.**

It's possible that certain formats for evidence can naturally cover several grading criteria and avoid the need for excessive amounts of evidence. For example, a report can be a good way to pull together evidence to meet several grading criteria.

For more guidance on generation and collection of evidence, please refer to the section 8 'Internal Assessment', in the qualification handbook.

## Group work

This assignment hasn't been written to include group work.

## After completing the assignment

Once the learner has submitted their work to you to be assessed, you must judge or 'mark' the work against the grading criteria for the unit and identify one grade for the unit. For further information about assessment, please refer to section 8 of the qualification handbook.

Your assessment decisions must be quality assured across the cohort of learners in your centre who are being entered for the same unit. This must be done through an internal standardisation process. We give information on internal assessment and standardisation in the qualification handbook.

## Reworking the assignment

If you and the learner feel they've not performed at their best during the assessment, the learner can, at your discretion, improve their work and resubmit it to you for assessment. If a learner is working on improving their work before it is resubmitted, you and the learner must continue to make sure the work is the learner's own.

Any feedback you give to the learner must not direct them on how to improve their work. You can identify what area of the work could be improved but you cannot give the learner any details about how they could improve it. You must follow the guidelines given in section 8 of the qualification handbook under 'Authenticity of learner work'.

## Modifying the model assignment

The tasks in this assignment allow learners access to the full range of grades detailed in the grading criteria of this unit.

If you modify this assignment you must **not** change the grading criteria provided in the tasks for the learner or in the evidence checklist. These grading criteria are taken from the unit.

You can modify the scenario to suit your local or regional needs and the tasks may be contextualised to match any changes you have made to the scenario. If you supply your own drawings to support a different scenario, these must be sufficiently detailed for learners to complete the tasks.

You can modify the type of evidence and the format it takes, unless we expressly state that evidence must take a specific format.

You must also make sure that you avoid discrimination, bias and stereotyping and support equality and diversity. For more information, please see the section 'Designing your own assignments for internally assessed units' in section 8 of the qualification handbook.

**If modifications are made to the model assignment, whether to the scenario alone, or to both the scenario and individual tasks, it's your responsibility to make sure that all grading criteria can still be met and that learners can access the full range of grades.**

If you're using this model assignment and delivering the Certificate you have an opportunity to secure meaningful employer involvement by working with an employer to modify it.

## General information for learners

**Q** *What do I need to do to pass this assignment?*

**A** You need to produce evidence to meet the requirements of **all** the pass criteria for the unit this assignment relates to. If you miss just one pass criterion, you will not achieve this unit and will receive an unclassified result.

**Q** *What do I need to do if I want to get a merit or distinction for this assignment?*

**A** For a merit, you need to produce evidence to meet the requirements of **all** the pass criteria for the unit this assignment relates to **and** you need to produce evidence to meet **all** the merit criteria.

For a distinction, in addition to the above, you also need to meet **all** the distinction criteria for this unit.

**Q** *What help will I get?*

**A** Your tutor will support you when completing this assignment and will make sure that you know what resources or facilities you need and are allowed to use. We've given your tutor information about how much support they can give you.

**Q** *What if I don't understand something?*

**A** It's your responsibility to read the assignment carefully and make sure you understand what you need to do and what you should hand in. If you are not sure, check with your tutor.

**Q** *I've been told I must not plagiarise. What does this mean?*

**A** Plagiarism is when you take someone else's work and pass this off as your own, or if you fail to acknowledge sources properly. This includes information taken from the internet.

It's not just about presenting a whole copied assignment as your own; you will also be plagiarising if you use the ideas or words of others without acknowledgement, and this is why it's important to reference your work correctly (see Q&A below for more information on referencing).

Plagiarism has serious consequences; you could lose the grade for this unit or you may not be allowed to achieve the whole qualification.

**Always remember that the work you produce must be your own work. You will be asked to sign a declaration to say that it is.**

**Q** *What is referencing and where can I find out more information about it?*

**A** Referencing is the process of acknowledging the work of others. If you use someone else's words and ideas in your assignment, you must acknowledge it, and this is done through referencing.

You should think about why you want to use and reference other people's work. If you need to show your own knowledge or understanding about an aspect of subject content in your assignment, then just quoting and referencing someone else's work will not show that **you** know or understand it. Make sure it's clear in your work how you are using the material you have referenced **to inform** your thoughts, ideas or conclusions.

You can find more information about how to reference in *The OCR Guide to Referencing* available on our website: <http://www.ocr.org.uk/Images/168840-the-ocr-guide-to-referencing>

**Q** *Can I work in a group?*

**A** This assignment hasn't been written to include group work.

**Q** *Does my work for each task need to be in a particular format?*

**A** You can present your work in a variety of ways – it can be handwritten, word-processed, on video or in digital media. What you choose should be appropriate to the task(s) and your tutor can advise you about this. There may be times when you need proof that you have completed the work yourself: for example, if you do something during work placement that you want to use as evidence, the tutor might ask the employer to provide a witness statement.

Make sure you check the wording in each task carefully. For each task, we'll tell you if your evidence has to be in a specific format:

- If we use the word '**must**', for example 'You must produce a report' or 'Your evidence/work must include a diagram', then you must produce the work in the stated format.
- If we use the word '**could**', for example 'You could include sketches of your ideas' or 'You could do this by annotating your diagram', this means that you are not required to follow the format we have given, but you must make sure that the work you do produce allows you to demonstrate the requirements of the grading criteria.

If you are unsure about what evidence you need, please ask your tutor.

**Q** *Can I ask my tutor for feedback on my work?*

**A** Yes, but they can't give you detailed feedback.

We have given your tutor instructions on what kind of feedback they can give you. For example, they are **not** allowed to tell you exactly what to do to make your work better, but they **can** remind you about what they've taught you and you can use this additional learning to try and improve your work independently. They can say what they've noticed might be wrong with your work, for example if your work is descriptive where an evaluation is required, but your tutor can't tell you specifically what you need to do to change it from a description to an evaluation – you will need to work out what you need to do and then do it for yourself.

**Q** *When I have finished, what do I need to do?*

**A** If you have included the personal details (such as name, address or date of birth) of someone other than yourself in your work, this must be blanked out (anonymised) – your tutor will tell you how to do this. You don't need to do this for information contained in references.

You can complete the evidence checklist to show your tutor where they can find the evidence for each grading criterion in your work.

You should make sure your work is labelled, titled and in the correct order for assessing.

Hand in the work that you've completed for each task to your tutor. They might ask to see your draft work, so please keep your draft work in a safe place.

**Q** *How will my work be assessed?*

**A** Your work will be marked by someone in your centre who has been authorised to do so. They will use the information in the grading criteria to decide which grade your work meets. The grading criteria are detailed in each unit and are also given in the tasks within this assignment. Please ask your tutor if you are unsure what the grading criteria are for this assignment.

# Assignment for learners

## Unit 3: Building IT systems

### Scenario

In order for any organisation to run effectively and successfully achieve its targets a range of supporting systems will need to be used.

It is now common practice that the vital systems within an organisation are automated and computer controlled which promotes accuracy and efficiency.

This has resulted in the increasing need for IT support technicians who are responsible for the design, development, implementation and testing of those systems. The role of an IT support technician requires an enhanced level of knowledge about hardware, software and networks and is now a vital role within most organisations.

### Progress Academy – IT support systems

Progress Academy is an education establishment with 500 students. The current systems in the academy are paper-based but the Academy would like to reduce the errors and environmental impact of paper-based systems through the use of automation.

The subsequent use of computer controlled systems will not only have a positive environmental impact but should improve the speed and accuracy at which the systems operate.

The Academy has identified three priority systems that require immediate automation - the student registration system, the monitoring of student grades and the control of stock and resources in the Academy e.g. paper, pens and equipment.

There are also secondary systems which are considered important to the effective daily running of the Academy. These include fault reporting, financial management and building maintenance routines.

The SMT at the Academy has very little experience with the design and implementation of IT systems and so has recently employed an IT support technician who will be responsible for the design and building of the IT support systems within it.

### Progress Academy – IT system specification

Progress Academy has stated the priority requirements that their IT system must have. These include:

- printing documentation and scanning documents or images;
- storing up to 500GB of information and images;
- transferring data to hand held devices, e.g. tablets or laptops;
- specialist display devices where appropriate;
- hosting video conferencing;
- a simple and easy to use graphical user interface;
- networking functionality to enable files transfer and sharing;
- a range of suitable software applications appropriate for teaching staff and students;
- internet access including appropriate security measures;
- authorised user only access;
- appropriate backup and recovery systems.

## Task 1: Explain the role of IT support technicians

(This task should take between 1 and 2 hours.)

**Learning Outcome 1:** Understand the roles of IT technical support.

Your task is to: brief Progress Academy's Board of Governors about the role of the recently appointed IT support technician.

You are required to provide a detailed and informed briefing to the Academy Governors and so you will need to research the IT support roles within a range of organisations and explain the activities and tasks that are performed by IT support technicians.

You should also identify any similarities or differences in the IT support that has been provided within each organisation to identify the appropriate IT support that will be required by Progress Academy.

Pass	Merit	Distinction
P1: Explain the role of an IT support technician in an organisation		D1: Compare the activities of different IT technician roles
<b>Evidence</b>		
<p><b>A report, information booklet or presentation which should include speaker notes.</b></p> <p>This must include:</p> <ul style="list-style-type: none"> <li>• job descriptions;</li> <li>• daily routines/tasks;</li> <li>• reporting and recording methods;</li> <li>• use of tools and equipment for troubleshooting;</li> <li>• the aims and purpose of IT technical support within a range of organisations;</li> <li>• advantages and disadvantages of IT technical support.</li> </ul>		

## Task 2: Design an IT system to meet business needs

(This task should take between 3 and 4 hours.)

**Learning Outcome 2:** Be able to design IT systems to meet business needs.

Your task is to: design an IT system that can be used by the teaching staff of Progress Academy.

With reference to the list of requirements from Progress Academy you must propose an IT system that will fulfil the specific needs of the end user. Your system does not need to meet all of the requirements but should focus on a specified area e.g. the student registration system, the monitoring of student grades or the control of stock and resources in the Academy. You will need to clearly identify the business requirements that must be considered to ensure the suitability of your IT system. Your proposal should include cost, security and recovery methods.

Your proposed IT system will be presented to the client (the Progress Academy SMT) for approval and so you will need to clearly explain how your proposed IT system will be 'fit for purpose' and suitable for the end users i.e. the teaching staff.

Pass	Merit	Distinction
P2: Propose an IT system to meet specified business needs	M1: Justify how the design meets the specified business needs	
<b>Evidence</b>		
<b>A detailed report or presentation which should include handouts.</b>		
This must include:		
<ul style="list-style-type: none"><li>• purpose (identified business need) and identified end users;</li><li>• hardware and software equipment;</li><li>• costs;</li><li>• security;</li><li>• backup and recovery methods.</li></ul>		

# Task 3: Identify the hardware and software required for the proposed IT system

(This task should take between 2 and 3 hours.)

**Learning Outcome 3:** Be able to select the components for the designed IT systems.

Your task is to: select the appropriate hardware and software components that will be required to build the IT system proposed in Task 2.

The SMT of Progress Academy has now agreed your proposal and has instructed you to develop the proposed IT system.

You will now need to select the appropriate hardware and software components required to meet the requirements of the IT system you proposed in Task 2.

The SMT of Progress Academy will be reviewing your selection of hardware and software and so you must clearly explain why you have selected each component.

Pass	Merit	Distinction
P3: Select the hardware components for the proposed IT system	M2: Justify why the selected components meet the proposed specification	
P4: Select the software for the proposed IT system		
<b>Evidence</b>		
<p><b>A detailed report, annotated diagrams/photographs, presentation with speaker notes and a spreadsheet.</b></p> <p>This must include:</p> <ul style="list-style-type: none"> <li>• hardware components (including devices);</li> <li>• software components;</li> <li>• network requirements (including topologies and hardware);</li> <li>• reasons for the choices made and the appropriateness of each component;</li> <li>• clear links to the requirements of the client and the needs of the business.</li> </ul>		

## Task 4: Build and configure the IT system

(This task should take between 4 and 5 hours.)

**Learning Outcome 4:** Be able to build and configure IT systems to meet business needs.

Your task is to: build and test your proposed IT system for Progress Academy.

The SMT of Progress Academy has now instructed you to build the IT system using the hardware and software that you have selected.

When you have completed the physical installation of the hardware and the software, the IT system will then need to be configured to satisfy the requirements of the client and be suitable for use by the end users (teaching staff). Referring to the stated requirements from Progress Academy you must ensure that the IT system has been appropriately configured.

There should be iterative testing as the system is being built and final testing of the system upon completion. Testing should include both the functionality and the configuration of the IT system and it should also include the client when appropriate (the client tests the system for accessibility).

Progress Academy would also like to be informed of any modifications or improvements that may be identified from the test results.

Pass	Merit	Distinction
P5: Build and test the IT system	M3: Carry out acceptance testing with the client	D2: Evaluate the results from testing and recommend improvements
P6: Configure and test the IT system		
<b>Evidence</b>		
<b>A detailed report including images, a video or a presentation including annotated images.</b>		
This must include:		
<ul style="list-style-type: none"><li>• evidence of configuration;</li><li>• evidence to show the building of the IT system including the installation of hardware and software;</li><li>• a test table (to show the testing of functionality and configuration);</li><li>• evidence of the involvement of the client in the testing process;</li><li>• analysis of the test results and subsequent improvement recommendations.</li></ul>		

# Evidence Checklist

## OCR Level 2 Cambridge Technicals in IT Unit 3: Building IT systems

LEARNER NAME:

<b>For Pass have you: (as a minimum you have to show you can meet every pass criterion to complete the unit)</b>	<b>Where can your tutor find the evidence? Give page no(s)/digital timings, etc.</b>
P1: Explained the role of an IT support technician in an organisation?	
P2: Proposed an IT system to meet specified business needs?	
P3: Selected the hardware components for the proposed IT system?	
P4: Selected the software for the proposed IT system?	
P5: Built and tested the IT system?	
P6: Configured and tested the IT system?	

<b>For Merit have you:</b>	<b>Where can your tutor find the evidence? Give page no(s)/digital timings, etc.</b>
M1: Justified how the design meets the specified business needs?	
M2: Justified why the selected components meet the proposed specification?	
M3: Carried out acceptance testing with the client?	

<b>For Distinction have you:</b>	<b>Where can your tutor find the evidence? Give page no(s)/digital timings, etc.</b>
D1: Compared the activities of different IT technician roles?	
D2: Evaluated the results from testing and recommended improvements?	

To find out more

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or call our Customer Contact Centre on **02476 851509**

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