OCR
Oxford Cambridge and RSA

Cambridge **TECHNICALS LEVEL 2**

IT

Cambridge
TECHNICALS
2016

Unit 11

IT hardware installation and upgrade

Y/615/1374

Guided learning hours: 30

Version 1 September 2016

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Guided learning hours: 30

Essential resources required for this unit: Candidates must have access to a range of hardware components (such as CPU, RAM, HDD) and a suitable standalone or networked system in order to carry out installation and upgrade of hardware components

This unit is internally assessed and externally moderated by OCR.

UNIT AIM

For this unit, hardware refers to the internal components of an IT system and NOT peripherals such as printers, keyboards, etc.

The aim of this unit is to allow you to demonstrate an understanding of the installation and upgrade of hardware. This includes having an understanding of the reasons why upgrades/installations are required and the factors to be considered when carrying out an installation or upgrade. You will be expected to carry out hardware installation and/or upgrades for a specified purpose. Testing will be required with review of the test results and you will be expected to evaluate the effectiveness of the installation and/or upgrade you have carried out.

The unit will cover aspects of the CompTIA A+ Certification, specifically with reference to installing and upgrading hardware and will also support the delivery of CompTIA IT Fundamentals

This unit is optional within the Award in Digital Business and in the IT Technical Practitioner pathway in the Diploma.

TEACHING CONTENT

The teaching content in every unit states what has to be taught to ensure that learners are able to access the highest grades.

Anything which follows an i.e. details what must be taught as part of that area of content. Anything which follows an e.g. is illustrative, it should be noted that where e.g. is used, learners must know and be able to apply relevant examples in their work, although these do not need to be the same ones specified in the unit content.

For internally assessed units you need to ensure that any assignments you create, or any modifications you make to an assignment, do not expect the learner to do more than they have been taught, but must enable them to access the full range of grades as described in the grading criteria.

Learning outcomes The Learner will:	Teaching content Learners must be taught:

1. Know the reasons for installing and upgrading IT hardware	1.1. Reasons, i.e.:
	• improvement to system, i.e.:
	   o increased performance
	   o increased transfer speeds
	   o support new software
	• to rectify hardware failure
	• to expand system, e.g. additional internal hard drive

2. Be able to prepare for IT hardware installation and upgrade	2.1. Preparing for installation and upgrade, i.e.: • understand the requirements for the hardware installation and upgrade (e.g. business and/or client needs) • select resources (e.g. software, hardware, diagnostic tools, equipment, health and safety equipment) • prepare test plan • backup system • check compatibility • prepare installation/upgrade plan (e.g. work sheet). 2.2. Recommend the precautions to be taken, e.g.: • check compatibility of software and hardware • backup system to prevent loss of data • consider viability of installation and upgrade • comply with organisational and legislative requirements • consider security implications to IT system • health and safety considerations (e.g. personal (themselves and others) damage to hardware, software, data and systems).
3. Be able to install and upgrade IT hardware	3.1. Follow installation plan (e.g. prepared in LO2). 3.2/3.3 Testing the functionality and compatibility of the installed and/or upgraded hardware, i.e.: • follow prepared test plan • carry out benchmarking • troubleshoot test issues • rectify faults and retest. 3.2. Effectiveness of upgrade/installation, i.e.: • does it meet organisational and/or client requirements? • does it function as required?

Learning outcomes	Teaching content
The Learner will:	**Learners must be taught:**
	• is it compatible with other hardware and software on the system? • is the system still secure? • is the original data available and accessible? • were there issues which could not be resolved? • is it a safe solution (e.g. does it comply with health and safety requirements?) • does the hardware meet the success criteria listed? • what were the issues with the hardware install/upgrade? (e.g. insufficient technical understanding to perform install/upgrade) • has the installation/upgrade been financially viable?

GRADING CRITERIA

LO	Pass	Merit	Distinction
	The assessment criteria are the Pass requirements for this unit.	To achieve a Merit the evidence must show that, in addition to the Pass criteria, the candidate is able to:	To achieve a Distinction the evidence must show that, in addition to the pass and merit criteria, the candidate is able to:
1. Know the reasons for installing and upgrading IT hardware	P1: Describe the reasons for installing and upgrading IT hardware		
2. Be able to prepare for IT hardware installation and upgrade	P2: Prepare the IT hardware installation and/or upgrade	M1: Recommend the precautions to be taken when upgrading and/or installing IT hardware	
3. Be able to install and upgrade IT hardware	P3: Carry out the installation and/or upgrading of IT hardware		D1: Evaluate the effectiveness of the installation and/or upgrading of IT hardware
	P4: Conduct tests on IT hardware installation and/or upgrade	M2: Review results of testing to confirm functionality and compatibility	

SYNOPTIC ASSESSMENT AND LINKS BETWEEN UNITS

When learners are taking an assessment task, or series of tasks, for this unit they will have opportunities to draw on relevant, appropriate knowledge, understanding and skills that they will have developed through other units. See section 6 of the Centre Handbook for more information on synoptic assessment.

This unit and specific LO	Name of other unit and related LO
LO1: Know the reasons for installing and upgrading IT hardware	**Unit 1: Essentials of IT** LO1: Know about hardware components LO3: Know how to install and upgrade hardware and software **Unit 2: Essentials of cyber security** LO1: Know about aspects of cyber security LO2: Understand the threats and vulnerabilities they can make LO3: Understand how organisations/individuals can minimise impacts from cyber security attacks **Unit 3: Building IT systems** LO2: Be able to design IT systems to meet business needs **Unit 6: Participating in a project** LO2: Be able to contribute to a project **Unit 8: Using emerging technologies** LO1: Know the technologies currently emerging LO2: Be able to explore how emerging technologies can support business needs LO3: Be able to reflect on future impacts of emerging technologies **Unit 9: Supporting IT functions** LO2: Be able to diagnose hardware faults **Unit 10: IT software installation and upgrade** LO1: Know the reasons for installing and upgrading IT software **Unit 12: Creating a computer network** LO1: Know the components of computer networks
LO2: Be able to prepare for IT hardware installation and upgrade	**Unit 1: Essentials of IT** LO3: Know how to install and upgrade hardware and software LO3: Know how to install and upgrade hardware and software **Unit 3: Building IT systems** LO3: Be able to select the components for designed IT systems **Unit 6: Participating in a project** LO2: Be able to contribute to a project **Unit 10: IT software installation and upgrade** LO2: Be able to prepare for IT software installation and upgrade **Unit 12: Creating a computer network**

This unit and specific LO	Name of other unit and related LO
	LO2: Be able to prepare for the installation of computer networks to meet business needs
LO3: Be able to install and upgrade IT hardware	**Unit 1: Essentials of IT** LO3: Know how to install and upgrade hardware and software **Unit 2: Essentials of cyber security** LO3: Understand how organisations/individuals can minimise impacts from cyber security attacks **Unit 3: Building IT systems** LO4: Be able to configure IT systems to meet business needs **Unit 6: Participating in a project** LO2: Be able to contribute to a project **Unit 9: Supporting IT functions** LO1: Be able to diagnose IT faults LO4: Be able to recommend maintenance activities **Unit 10: IT software installation and upgrade** LO3: Be able to install and upgrade IT software **Unit 12: Creating a computer network** LO3: Be able to create computer networks to meet business needs LO4: Be able to secure computer networks to meet business needs

ASSESSMENT GUIDANCE

LO1 Know the reasons for installing and upgrading IT hardware

P1: Learners must outline the reasons for installing and upgrading IT hardware. To evidence this, learners could produce a written document, they could provide audio or video evidence of a discussion, or they could produce a mind map.

LO2 Be able to prepare for IT hardware installation and upgrade

P2: Learners are asked to prepare the installation and upgrade IT hardware. It is important that the learners are provided with an IT system which will require them to consider the needs of the business and/or client, the type of installation and upgrade required, and the documentation they will need to complete to support this activity.

M1: Learners are required to recommend the precautions that they will take in order to successfully and securely install and/or upgrade the hardware on the given IT system. These recommendations must consider the various issues that can arise when carrying out such activities. Particular attention should be made to health and safety considerations and the fact that there is live power involved and the static implications from handling hardware components.

LO3 Be able to install and upgrade IT hardware

P3: Learners are required to carry out the installation and/or upgrading of the hardware on the given IT system based on the plans that they prepared for P2. Evidence could include a video of the installations, photographs or report.

P4/M2: Learners are required to conduct tests on the functionality of the IT hardware that has been installed and/or upgraded on the given IT system. The testing process should be based on the test plan that was originally created in P2 and may include benchmarking tests and diagnostic hardware tests. The tests should show the actual test carried out, the expected results, the actual results and any issues identified. Issues must be clearly addressed and retested with the test plan being updated.

D1: Learners are required to evaluate the effectiveness of the installation and/or upgrading of IT hardware. The evaluation could consider the process applied when installing/upgrading hardware, the issues that arose and whether they were able to resolve them, as well as whether the installation/upgrade meets the original business and/or client requirements.

Feedback to learners: you can discuss work-in-progress towards summative assessment with learners to make sure it's being done in a planned and timely manner. It also provides an opportunity for you to check the authenticity of the work. You must intervene if you feel there's a health and safety risk.

Learners should use their own words when producing evidence of their knowledge and understanding. When learners use their own words it reduces the possibility of learners' work being identified as plagiarised. If a learner does use someone else's words and ideas in their work, they must acknowledge it, and this is done through referencing. Just quoting and referencing someone else's work will not show that the learner knows or understands it. It has to be clear in the work how the learner is using the material they have referenced to inform their thoughts, ideas or conclusions.

For more information about internal assessment, including feedback, authentication and plagiarism, see the centre handbook. Information about how to reference is in the OCR Guide to Referencing available on our website: http://www.ocr.org.uk/i-want-to/skills-guides/

MEANINGFUL EMPLOYER INVOLVEMENT - a requirement for the Technical certificate qualifications

These qualifications have been designed to be recognised as Technical certificates in performance tables in England. It is a requirement of these qualifications for centres to secure for every learner employer involvement through delivery and/or assessment of these qualifications.

The minimum amount of employer involvement must relate to at least one or more of the elements of the mandatory content.

Eligible activities and suggestions/ideas that may help you in securing meaningful employer involvement for this unit are given in the table below.

Please refer to the *Qualification Handbook* for further information including a list of activities that are not considered to meet this requirement.

Meaningful employer engagement	Suggestion/ideas for centres when delivering this unit
1. Learners undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification.	Learners could work with their school/college/training provider IT support team to develop skills required to install and upgrade hardware.
2. Learners undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s).	Industry practitioners (school/college/training provider IT support team) could be involved in preparing IT systems where hardware installations and/or upgrades are required.
3. Learners take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures.	Industry practitioners (school/college/training provider IT support team) could be involved in the delivery of the technical aspects of the unit and be available to support learners in elements of the unit.
4. Industry practitioners operating as 'expert witnesses' that contribute to the assessment of a learner's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.	Industry practitioners (e.g. college or school IT support team) could be involved in the assessment of learners' work, providing witness statements to support the assessment of the practical activities.

You can find further information on employer involvement in the delivery of qualifications in the following documents:

● Employer involvement in the delivery and assessment of vocational qualifications

● DfE work experience guidance

To find out more
ocr.org.uk/it
or call our Customer Contact Centre on **02476 851509**

Alternatively, you can email us on **vocational.qualifications@ocr.org.uk**