Unit 118: CompTIA A+ Practical applications

Unit code: M/602/1388

QCF Level 2: BTEC in IT

Credit value: 10

Guided learning hours: 60

Aim and purpose

Successful candidates will have the knowledge required to understand the fundamentals of computer technology, networking, and security, and will have the skills required to identify hardware, peripheral, networking, and security components. Successful candidates will understand the basic functionality of the operating system and basic troubleshooting methodology, practice proper safety procedures, and will effectively interact with customers and peers.

Unit introduction

This unit is a comprehensive introduction to the principles of computer hardware systems support and enable a learner to explore the technology used in a range of hardware systems as well as operating systems.

The unit covers repair techniques, being able to maintain a system and how a learner may be employed as a systems support specialised. Working with different operating systems, apart from systems hardware, the learner will also explore the implementation of SOHO (small office home office) networking systems, safe practices and systems security management (and the related issues).

CompTIA link with a range of different partners to offer a range of learning resources, where learners and centres can access these through CompTIAs Academic learning programme. To attain a pass, learners must take the CompTIA A+ practical applications certification exam.

This unit will prepare learners to sit the CompTIA A+ Practical Applications certification exam, this unit is also assessed with BTEC merit and distinction criteria.

To view general information about CompTIA objectives please visit: www.comptia.org, where the detailed scope and sequence for all certifications are available for anyone to download.

Learning outcomes

On completion of this unit a learner should:

1 Understand Hardware

2 Understand Operating Systems

3 Understand Networking

4 Understand Security.

Unit content in relation to the Merit and Distinction Criteria

Hardware: eg motherboard, processor, fan, case, power supply, optical drive, hard drive, solid-state memory, keyboard, pointing device, display, network connection, memory, peripheral devices

System Maintenance: eg disk management, system scans, memory checks, software licence checks, software updates, utilisation and load checks

Operating system: eg Microsoft Windows, Mac OSX, Linux (any variant)

Networking: eg addressing, proxy, domain name service, wireless connection, Bluetooth, cabled connection, small office home office network (soho), wireless access point, router, switch; two or more devices able to maintain an internet connection

Security: eg firewall, antivirus, spyware, updates, service packs, user access levels, supervisor password

System: a combination of hardware and operating system for any given purpose

Fault: eg drive based, memory based, incorrect installation, lost files, incompatible software, incompatible hardware, driver based, addressing issue, security issue

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
Pass CompTIA A+ Practical applications Certification Exam The centre will evidence this with a copy of the learners results, the learner MUST PASS at the minimum set by CompTIA.	**M1** plan system maintenance for different hardware systems [IE, CT]	**D1** review the maintenance provided for the different hardware systems [IE, CT, SM]
	M2 support and maintain a hardware system [IE, SM]	**D2** test and troubleshoot a faulty hardware system. [SM, IE]
	M3 implement a small networking environment [TW, EP, SM]	
	M4 implement security on a system. [TW, EP, SM]	

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key			
	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

The CompTIA A+ practical applications course and associated certifications are delivered as part of an academic programme available to centres in UK and Eire. Centres may only access this certification's associated discounts from within this programme are advised to seek guidance on what current courses comprise the study/delivery required for learners to access the certification.

More information on the programme, membership and delivery requirements can be found at www.comptia.org.

If learners are taking CompTIA study as part of their BTEC programme, it is recommended that both programmes of study are integrated. Practical and theory tasks for the CompTIA programme can be integrated into the study required for the merit and distinction criteria within this unit.

The outcomes of this unit are synergic with the A+ Essentials, both units may be delivered in parallel or in sequence. Units in systems support and networking that are both BTEC specific as well as from other vendors may be taught in conjunction with the CompTIA units to enhance the learners experience.

Outline learning plan

CompTIA as part of the their academy programme, provide learning plans and study guidance for their courses. CompTIA recommend an estimated 75 hours of delivery to attain the pass criteria, in line with QCF credit and notional learning hours. The notional hours for managed learning is set at 40 for learners to attempt the merit and distinction

Assessment

To achieve a pass grade, learners must pass the CompTIA A+ Practical Applications examination.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
M1, D1	Managing maintenance	Learners are asked to plan their support for different hardware systems (at least two).	Presentation, poster, oral, report, video.
M2 M3, M4, D1	Maintain the system	Learners will support a different systems ensuring it is operational, secure and able access a network they have built.	Presentation, poster, oral, report, video, practical observation.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

To be completed, links to 6.1 of the NOS and may be co-presented with all other CompTIA modules

Essential resources

As members of the CompTIA academic programme, centres may choose to access a range of teaching and assessment practice resources. The technological requirement for this unit does not demand any more than the 'average' centre is already providing for a computer systems session, old computers, spare components, replacement parts will enhance the learning experience. If a centre is restricted by the cost of licensing, many Linux distributions exist, that are easy to install and now comparable in support and management terms to other popular operating systems.

Employer engagement and vocational contexts

ComTIA certification is internationally recognized by a diverse range of employers (from SME's to large corporations) as one of the principal certifications in systems support and maintenance.

Indicative reading for learners

For access to the CompTIA academic programme resources and more information on joining the programme, please visit www.comptia.org

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	The pass criteria is set by an examination, the PLTS of self management and reflective learning is supported by the learner, taking personal study and revision in advance of the Examination.
Creative thinkers	
Reflective learners	
Team workers	
Self-managers	
Effective participators	

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	investigating current hardware and operating system solutions as well as testing and troubleshooting a system
Creative thinkers	preparing a recommendation for system maintenance as well as testing and troubleshooting a system
Reflective learners	evaluating their system maintenance plan as well as testing and troubleshooting a system
Self-managers	implementing hardware solutions, networking solutions and security solutions.

Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	Preparing the recommendation and managing the hardware solutions
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	Preparing the recommendation and managing the hardware solutions
Manage information storage to enable efficient retrieval	Preparing the recommendation and managing the hardware solutions
Follow and understand the need for safety and security practices	Working on the security solution as well as at all times on the hardware
Troubleshoot	Testing and troubleshooting the system
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	Gathering information for the recommendation
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	Gathering information for recommendation
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	Are applying subnet masks and IP addresses.