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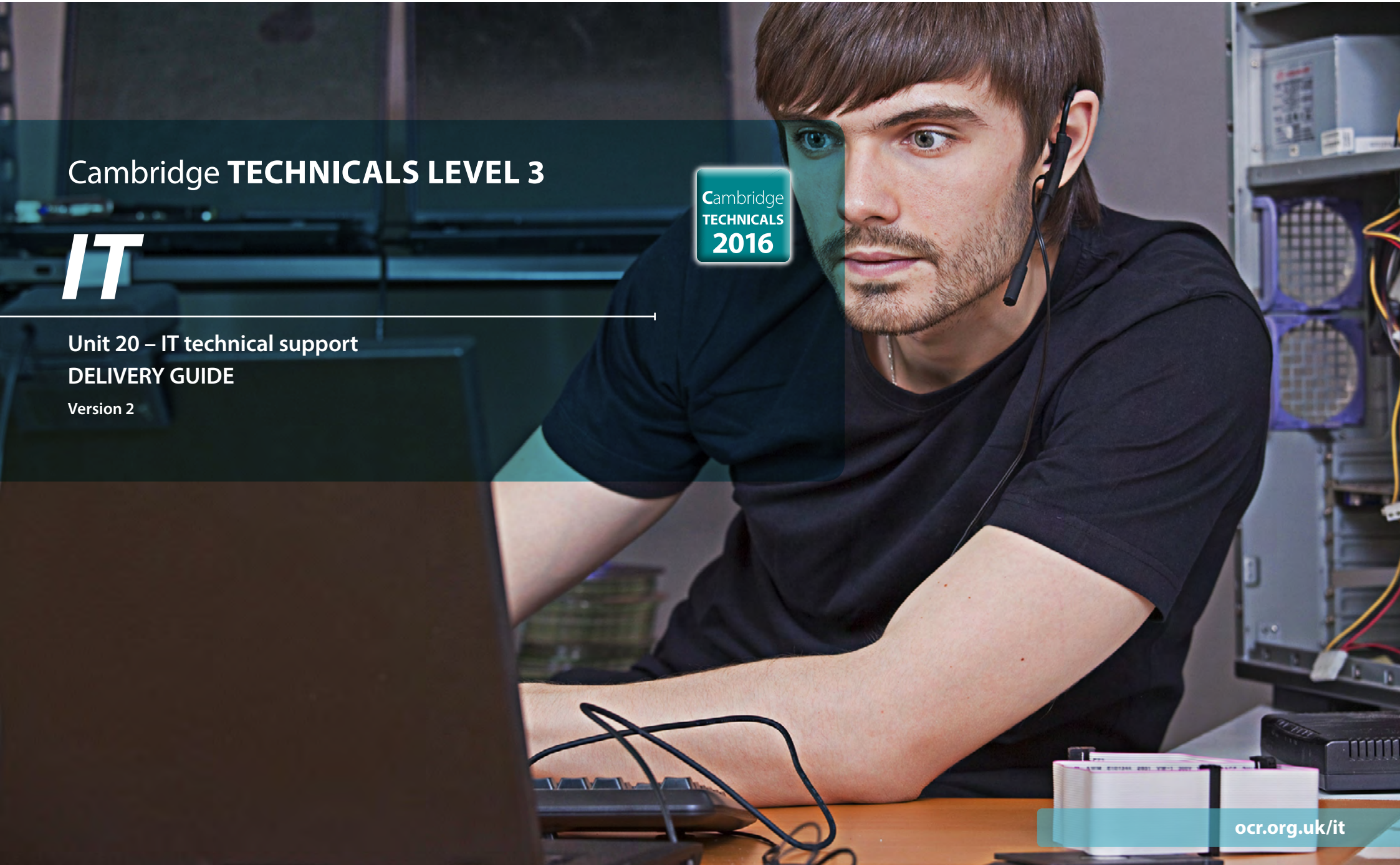

Cambridge **TECHNICALS LEVEL 3**

Cambridge TECHNICALS 2016

IT

Unit 20 – IT technical support
DELIVERY GUIDE

Version 2

ocr.org.uk/it

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INTRODUCTION

This Delivery Guide has been developed to provide practitioners with a variety of creative and practical ideas to support the delivery of this qualification. The Guide is a collection of lesson ideas with associated activities, which you may find helpful as you plan your lessons.

OCR has collaborated with current practitioners to ensure that the ideas put forward in this Delivery Guide are practical, realistic and dynamic. The Guide is structured by learning outcome so you can see how each activity helps you cover the requirements of this unit.

We appreciate that practitioners are knowledgeable in relation to what works for them and their learners. Therefore, the resources we have produced should not restrict or impact on practitioners' creativity to deliver excellent learning opportunities.

Whether you are an experienced practitioner or new to the sector, we hope you find something in this guide which will help you to deliver excellent learning opportunities.

If you have any feedback on this Delivery Guide or suggestions for other resources you would like OCR to develop, please email resources.feedback@ocr.org.uk.

OPPORTUNITIES FOR ENGLISH AND MATHS SKILLS DEVELOPMENT AND WORK EXPERIENCE

We believe that being able to make good progress in English and maths is essential to learners in both of these contexts and on a range of learning programmes. To help you enable your learners to progress in these subjects, we have signposted opportunities for English and maths skills practice within this resource. We have also identified any potential work experience opportunities within the activities. These suggestions are for guidance only. They are not designed to replace your own subject knowledge and expertise in deciding what is most appropriate for your learners.

English

Maths


Work

Please note

The timings for the suggested activities in this Delivery Guide **DO NOT** relate to the Guided Learning Hours (GLHs) for each unit.

Assessment guidance can be found within the Unit document available from www.ocr.org.uk.

The latest version of this Delivery Guide can be downloaded from the OCR website.

UNIT AIM

The aim of this unit is to explore the problems that are likely to be encountered by IT support professionals. You will learn about many of the tasks that they carry out.

You will develop an understanding of technical support tools and techniques. This will include looking at organisational policies and procedures to source technical information. You will also learn how to diagnose faults and communicate advice and guidance to clients to help resolve problems.

This unit is optional within the IT Infrastructure Technician specialist pathway as all IT support technicians require the skills, knowledge and understanding to troubleshoot a wide variety of hardware and software issues and provide advice and guidance to different stakeholders.

The learning in this unit will also support the delivery of the CompTIA A+, the CompTIA Mobility+ qualification objectives, as well as the Cisco ITE qualification.

Unit 20 IT technical support	
LO1	Understand the role of technical support
LO2	Be able to diagnose faults and solutions for computer systems
LO3	Be able to provide advice and guidance to specific customers

To find out more about this qualification please go to: http://www.ocr.org.uk/qualifications/cambridge-technicals-it-level-3-certificate-extended-certificate-introductory-diploma-foundation-diploma-diploma-05838-05842-2016-suite

The activities within this teaching and learning resource must not be used for summative assessment purposes. As part of our teaching we expect support to be given to your learners; such support is not permissible for summative assessment and is likely to be considered malpractice.

Cambridge TECHNICALS 2016

2016 Suite

- **New suite for first teaching September 2016**
- **Externally assessed content**
- **Eligible for Key Stage 5 performance points from 2018**
- **Designed to meet the DfE technical guidance**

RELATED ACTIVITIES

The Suggested Activities in this Delivery Guide listed below have also been related to other Cambridge Technicals in IT units/Learning Outcomes (LOs). This could help with delivery planning and enable learners to cover multiple parts of units.

This unit (Unit 20)	Title of suggested activity	Other units/LOs	
LO1	Understanding the needs of different client types	Unit 20 IT technical support	LO3 Be able to provide advice and guidance to specific customers
	Communicating advice to different types of client	Unit1 Fundamentals of IT	LO4 Understand employability and communication skills used in an IT environment
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems LO3 Be able to provide advice and guidance to specific customers
LO2	Using software diagnostic tools and techniques	Unit 18 Computer systems hardware	LO1 Understand the components of a computer system LO4 Be able to test and evaluate the functionality of computer systems
		Unit 19 Computer systems software	LO1 Understand different software installations and their purpose LO2 Be able to implement software installations and upgrades to meet specified user requirements LO3 Be able to conduct system maintenance using utility software
	Identifying simple types of faults	Unit 18 Computer systems hardware	LO1 Understand the components of a computer system LO2 Be able to propose a computer system for identified business requirements LO3 Be able to build or upgrade computers LO4 Be able to test and evaluate the functionality of computer systems
		Unit 19 Computer systems software	LO1 Understand different software installations and their purpose LO2 Be able to implement software installations and upgrades to meet specified user requirements LO3 Be able to conduct system maintenance using utility software
	Identifying complex types of faults	Unit 18 Computer systems hardware	LO1 Understand the components of a computer system LO2 Be able to propose a computer system for identified business requirements LO3 Be able to build or upgrade computers LO4 Be able to test and evaluate the functionality of computer systems
		Unit 19 Computer systems software	LO1 Understand different software installations and their purpose LO2 Be able to implement software installations and upgrades to meet specified user requirements LO3 Be able to conduct system maintenance using utility software
	Identifying interlinked types of faults	Unit 18 Computer systems hardware	LO1 Understand the components of a computer system LO2 Be able to propose a computer system for identified business requirements LO3 Be able to build or upgrade computers LO4 Be able to test and evaluate the functionality of computer systems
		Unit 19 Computer systems software	LO1 Understand different software installations and their purpose LO2 Be able to implement software installations and upgrades to meet specified user requirements LO3 Be able to conduct system maintenance using utility software

This unit (Unit 20)	Title of suggested activity	Other units/LOs	
LO2	Performing post fault testing	Unit 18 Computer systems hardware	LO4 Be able to test and evaluate the functionality of computer systems
		Unit 19 Computer systems software	LO1 Understand different software installations and their purpose LO2 Be able to implement software installations and upgrades to meet specified user requirements LO3 Be able to conduct system maintenance using utility software
LO3	Consideration of communication techniques	Unit 1 Fundamentals of IT	LO4 Understand employability and communication skills used in an IT environment
	Effectiveness of technical provision – getting feedback from clients	Unit 6 Application design	LO2 Be able to investigate potential solutions for application developments
		Unit 7 Data analysis and design	LO2 Be able to investigate client requirements for data analysis
		Unit 11 Systems analysis and design	LO2 Be able to use investigative techniques to establish requirements for business systems

KEY TERMS

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
1st line support	Typically helpdesk operators that initially handle user support issues, log them and dispatch to 2nd line support. Often they may rely on reading from scripted dialogues to determine and resolve issues.
2nd line support	IT technical roles including desktop support, IT technicians etc who can solve common issues across the broad range of topics.
3rd line support	IT technical roles which are highly specialised; typically focused on particular operating systems (e.g. Windows, Linux, Apple Max OSX), services (e.g. security, email, web) or hardware/infrastructure (servers, networking).
Basic Input Out System (BIOS)	The Basic Input Out System is an erasable ROM device that holds a program that controls and monitors all devices on the motherboard. The first instruction executed by the CPU is located in the BIOS. At start-up the BIOS configures all devices and conducts a Power On Self-Test (POST). On completion of the POST the BIOS instructions will access the hard drive to load the operating system.
Call logger	The collection, evaluation and reporting of technical and statistical data about support calls received by an IT helpdesk.
Escalation	In IT technical support a process which occurs when a problem cannot be easily resolved; less experienced technicians may 'raise' the issue with a specialist or their line manager in order to secure resolution.
Emerging technologies	Technologies which leverage the most prominent innovations to provide a competitive advantage.
Helpdesk	A service, internal or external, which provides support to users, often in the IT field.
Interpersonal skills	Everyday life skills used to communicate with other people, including the abilities to listen attentively, value other people's opinions and take criticism with good grace. Non-verbal communication, i.e. body language, is also considered a vital element.
Organisational constraints	Internal or external factors which limit the operations of an organisation, e.g. time, money, opportunity, legislation etc.
Service level agreement (SLA)	A document or collection of documents that form a written agreement between a service provider (e.g. those providing IT technical support) to the end user (customer). It will define the scope and level of service that is expected by the end user from the service provider. Often this includes response times, availability, responsibilities, standard operating procedures (SOPs) and complaints procedure. SLAs are typically in place whether the service provider is internal or external.
Standard operational procedures (SOPs)	A set of step-by-step instructions provided by an organisation which help users/employees to carry out a particular task. The objective is to ensure that the task is completed efficiently, safely and complying with industry standards.
Trend	A general direction which is identifiable; in terms of IT technical support this could relate to emerging fail rates with certain batches of equipment or components that, once tracked, can suggest a faulty model, poor manufacturing standards or incorrect use.

MISCONCEPTIONS

Some common misconceptions and guidance on how they could be overcome		
What is the misconception?	**How can this be overcome?**	**Resources which could help**
The terms 1st, 2nd and 3rd line technical support	Learners may confuse the different responsibilities of 1st, 2nd and 3rd line technical support as roles sometimes overlap or can be used differently (particularly 2nd and 3rd) in job advertisements..	Definitions for each are available through The Tech Partnership (as e-Skills successor), although registration is required for access. Organisation: The Tech Partnership Website Link: https://www.thetechpartnership.com
The terms novice, non-technical and technical user	Learners may find it difficult to differentiate the abilities of clients fitting these categories when communicating IT technical support issues and solutions.	Various interpretations exist and some perspective can be gleaned from an examination of how communication is adjusted to deal with users with different level of abilities, particularly in terms of user documentation and human computer interaction (HCI). Resource Title: Identifying User Groups/Matching Users and Interaction Style Website Link: http://www.it.bton.ac.uk/staff/lp22/CS133/usergroups.html

SUGGESTED ACTIVITIES

LO No:	1		
LO Title:	**Understand the role of technical support**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Researching IT support roles	The tutor could use this topic to introduce the concept of IT technical support. As part of this introduction links could be made to learners' previous experience with helpdesk facilities they may have contacted – this forms a useful foundation for the topic. Learners must be able to differentiate between the types of support roles that exist within an IT technical support function, i.e. 1st line, 2nd line and 3rd line. Learners could investigate local/national job opportunities within the IT technical support function via online sites such as: https://www.technojobs.co.uk http://www.reed.co.uk/jobs/it-jobs http://www.indeed.co.uk/ Additionally many online resources exist which detail the features of IT technical support employment: https://targetjobs.co.uk/careers-advice/job-descriptions/280507-it-technical-support-officer-job-description http://www.cwjobs.co.uk/careers-advice/profiles/technical-support-helpdesk These often provide good descriptions of each job role, highlighting the technical expertise, educational background and person skills required for each type of role. Salary information may also prove motivational to some learners and provide extra drivers for the unit's study. Learners could create posters, wikis or electronic slideshows detailing each role or perhaps describe the role which they would prefer, explaining their reasons why.  Opportunities also exist within an organisation for work-related content in the form of guest speakers (e.g. from institution's helpdesk), workplace visits to external partners, training videos, video conferencing and flexible work experience opportunities (e.g. local schools and SMEs – small and medium-sized enterprises) for mentoring, observation or direct involvement.	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Undertaking the support process 	The tutor could focus on the two key components of the support process, e.g.: • Helpdesk activities • IT support requests. For helpdesk activities it is helpful for learners to observe a helpdesk function first-hand through a work visit or using internal services, if available. A better alternative is simulation and role-play through the use of a local area network (LAN) solution running open source web-based helpdesk software. A relatively simple LAMP (Linux, Apache, MySQL, PHP) or WAMP (Windows, Apache, MySQL and PHP) set-up can be used to run software such as OSTicket, a popular open source solution used in industry. OSTicket – open source helpdesk ticket system: http://osticket.com/ XAMPP – easy to install Apache distribution for major platforms: https://www.apachefriends.org/index.html Learners could then take turns role-playing 1st and 2nd line support and customers. The software would allow them to raise support tickets, prioritise them, assign them to staff, log solutions. Although IT support requests can be made through paper-based formats or email, the use of more realistic simulation is advised as it demonstrates the full process in an exemplary practical manner. Note: Such resources can also be used to help support communicating advice to different types of client, using different media, e.g. email, online discussion etc.	6 hours (3 x 2 hours)	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Performing analysis and allocating resources  	The tutor could introduce the concept of trends and their relevance to technical support, i.e. identifying trends in reported faults to better prepare or make more informed decisions regarding future purchasing of hardware or software. Learners could be given access to historic fault reports/logs which identify a range of errors and faults reported by users. By asking learners to analyse the frequency of certain faults, it should be possible to highlight particular patterns and trends. This type of activity could have plenty of scope for exercising learners' maths and statistics skills. Learners can then present their findings and make suitable recommendations, e.g. avoid buying certain models of hard disk which have proven unreliable. In terms of resources it is likely that the tutor should be able to create an IT technical support management simulation using the following items for an imaginary IT technical support function: • Staff CVs including their training and experience • Staff availability and holidays • Shift patterns and staff requirements (1st, 2nd and 3rd line) • Upcoming training opportunities. From these documents learners could, working in small groups, organise the staff roster and allocate appropriate staff to field customer issues. The tutor can then introduce certain incidents which test the skills of staff available. Where staff skills are identified as being weak in certain areas, training could be identified (for team members who are free to attend). Conducting a group-based activity like this helps learners to understand the different factors which affect the resources available to fulfil the support process. Additional input from a guest speaker or facilitator familiar with managing IT technical support functions would be ideal.	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Creating policies	The tutor could introduce the role of policies in IT technical support, especially the use of: • Service level agreements (SLAs) • Computer use policy • Standard and non-standard equipment policy. Learners could be given access to the typical components of a SLA, preferably through a commercially insensitive copy. This can then be discussed and dissected through actively directed group discussion. Given a suitable organisational case study, learners should then be able to construct a suitable SLA to support the given business as a formal document. In terms of computer use policy it is likely that learners could have signed similar documents previously (perhaps at school or college) and are familiar with the concept of acceptable use and the typical actions which are usually forbidden. The tutor could ask learners to determine the importance and relevance of each constraint placed on employees/customers/learners/etc and the potential impact (to both the organisation and IT technical support) if they are breached. Learners working in pairs could then be asked to construct a suitable computer use policy for a given scenario, perhaps as a intranet-style web page, and provide a rationale for each constraint included. Ideally, learners could then compare and contrast their peers' efforts to reach a common consensus. The tutor will need to differentiate between standard and non-standard equipment policies, providing examples of each, their respective purposes and how they impact the IT technical support function.   Sample SLA document: http://www.itdonut.co.uk/it/it-support/it-support-contracts/sample-service-level-agreement SANS acceptable use template document: https://www.sans.org/security-resources/policies/general/pdf/acceptable-use-policy	3 hours (3 x 1 hour)	

<table>
<tr><th>Title of suggested activity</th><th>Suggested activities</th><th>Suggested timings</th><th>Also related to</th></tr>
<tr><td>Understanding the needs of different client types</td><td>
The tutor needs to introduce the concept of differentiating client types by environment, skill level, software use and feature complexity.

Learners should be able to differentiate client types on these factors. Whilst the environment concept is a reasonably straightforward distinction it is possible to blur this due to the rise in telecommuting and home working.

The tutor may prefer to present or discuss these distinctions but it is recommended to use a simple problem-solving quiz approach where learners are given a series of IT support request samples (written in first person) and they have to identify the client types categories correctly. This could be achieved manually, through electronic slideshow or through the use of interactive whiteboards/ slates/voting sets.

A typical sample could look like this:

<table>
<tr><th>Client scenario</th><th>Environment</th><th>Skill Level</th><th>Software use</th><th>Features</th></tr>
<tr><td>XXXXXX
XXXXXX
XXXXXX</td><td>• Corporate
• Home</td><td>• Novice
• Non-technical
• Technical</td><td>• Games
• Word processing
• Database</td><td>• Basic
• Advanced</td></tr>
</table>


To add a competition dimension, the group could be split with one half of the learners creating sample scenarios and the other half solving (and then swapping). This would reinforce learning and offer opportunities to demonstrate English skills such as creative writing and comprehension.
</td><td>2 hours</td><td>Unit 20 LO3</td></tr>
</table>

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Communicating advice to different types of client   	The tutor needs to prepare a computer system with a deliberate fault – this may be hardware or software based. The fault should only require elementary fault-finding (more complex examples could follow). Learners, working in pairs, could discover the fault and prepare to explain the nature of the fault and the actions being performed to the client. Ideally some faults may not be immediately repairable. However, each pair will need to draw two different situational cards from two pre-prepared piles (this could be done electronically via a web page, interactive whiteboard or a software application if preferred). • Card pile 1 – controls the client type (novice, non-technical, technical) • Card pile 2 – controls the communication method to use (face-to-face, email, telephone, instant messaging etc). Learners could then tailor their communication to the situation described by the cards. The tutor could then observe each learner's communication with a colleague (role-playing) to observe their interpersonal skills. The role-playing colleague should react consistently with the active situation. Learners could then be asked to self-assess their own interpersonal skills and be given external feedback from their tutor who has noted their active listening, negotiation, acceptance and ability to take criticism. Learners could then be able to compare and contrast their self perception and how others see them. The use of video recordings can be helpful in this type of exercise.	2 hours	Unit 1 LO4 Unit 20 LO2, LO3

SUGGESTED ACTIVITIES

LO No:	2		
LO Title:	**Be able to diagnose faults and solutions for computer systems**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Using software diagnostic tools and techniques	The tutor could introduce the concept of using software tools to help IT technicians diagnose issues and faults within a computer system. Ideally learners could be given access to a number of software diagnostic utilities which can be used to test various aspects of the system. Areas which learners could gain experience of include: • Disk fragmentation • Hard disk tools/File checker • Anti-virus suites • CPU/process performance • RAM usage monitors • Network connectivity • Firewall • BIOS health monitor/configuration. In addition learners should be able to use a mix of graphical user interface (GUI)-based tools and those which run command line interface (CLI). The availability of different operations systems is also key, e.g. use of IPCONFIG (MS Windows) or IFCONFIG (Linux) to test network connectivity. Learners should be able to demonstrate the practical use a specific tool to resolve a problem, e.g. altering the configuration of a computer system to remove a process stalling on start-up or identifying a faulty network card driver.  Opportunities exist for learners to observe more complex software diagnostic tools being used by IT professionals in workplace visits.  Many activities will involve calculations, numerical comparisons, percentages and unit conversions which can exercise learners' mathematic skills.	3 hours	Unit 18 LO1, LO4 Unit 19 LO1, LO2, LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Identifying simple types of faults   	The tutor needs to prepare a number of computer systems with identifiable faults. Each fault needs to be basic in nature, i.e. fairly self-evident and easy to diagnose and resolve. The faults may be hardware or software related. Common examples could include: • Faulty cables (video, power, network etc) • Faulty power supply or missing fuse • Incorrectly configured operating system, e.g. country settings, screen resolution • Incorrectly configured devices, e.g. keyboard, mouse etc • Incorrect BIOS settings, e.g. boot order • No operating system loaded • An internal component disconnected, e.g. disk drive cable • Missing driver, e.g. sound card or network interface card (NIC). Learners should be able to demonstrate a methodical approach to problem-solving, ensuring they have the required information about the computer system they are investigating and the necessary hardware and software tools. Whilst working on computer hardware learners would be expected to demonstrate the appropriate health and safety considerations. It is recommended that learners take photographic or video evidence of their work. Learners could also document their discovered fault, the solution and steps taken to achieve it. The tutor could ensure that the learner has tested post-fault, i.e. that the resolution has been successful. Learner work can be organised into an informal report using screen captures and photographic or video stills as supporting evidence. Where possible problems could be sourced from realistic work-based scenarios. This unit supports the delivery of Cisco ITE: https://www.cisco.com/web/learning/netacad/course_catalog/docs/Cisco_ITE_DS.pdf	3 hours	Unit 18 LO1, LO2, LO3, LO4 Unit 19 LO1, LO2, LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Identifying complex types of faults	The tutor needs to prepare a number of computer systems with identifiable faults. Each fault needs to be complex in nature, i.e. not obvious and will likely require research and deduction on the learner's part to correctly diagnose and resolve. It is possible that there may be more than one issue. The faults may be hardware or software related. Common examples could include: • Over-clocked CPU which is crashing computer system • Damaged or badly clocked RAM • Cooling fan/motherboard overheating issues • Incorrect driver versions loaded (wrong operating system) • Lack of network connectivity (firewall settings) • Active (but benign) virus altering computer system behaviour • Incorrectly wired front panel connections between case and motherboard • Incompatible application software/operating system • Hard disk logical damage and lost files • Corrupted or poorly configured operating system (e.g. MS Windows registry settings) • Lost password • Damaged application installation which needs repairing or reinstalling. Learners should be able to demonstrate a methodical approach to problem-solving, ensuring they have the required information about the computer system they are investigating and the necessary hardware and software tools. Whilst working on computer hardware learners would be expected to demonstrate the appropriate health and safety considerations. When working with software issues, it is advisable that system settings and critical user documents are backed up (and tested) before any amendment to an application, operating system or file system is attempted.  It is recommended that learners take photographic or video evidence of their work.  Learners could also document their discovered fault, the solution and steps taken to achieve it. The tutor could ensure that the learner has tested post-fault, i.e. that the resolution has been successful.  Learner work can be organised into an informal report using screen captures and photographic or video stills as supporting evidence. Where possible problems could be sourced from realistic work-based scenarios.	3 hours	Unit 18 LO1, LO2, LO3, LO4 Unit 19 LO1, LO2, LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Identifying interlinked types of faults	The tutor needs to prepare a number of computer systems with interlinked faults. Each fault needs to be reasonably complex in nature but learners could find that once it is resolved a connected issue could appear. The faults may be hardware or software related (or a combination). The learners could find these problems more challenging to solve and that they require additional research and fact-finding before a working solution can be found. Common examples could include: • A network application not working; no network card has been installed, leading to issues with network interface card driver, firewall exceptions etc. • An application does not run; the version installed is incompatible with the operating system leading to updates of the application and the operating system and then the requirement to install new run-time libraries. • An application will not run; a lack of RAM is diagnosed but the motherboard will not accept the additional RAM unless the BIOS is updated. Learners should be able to demonstrate a methodical approach to problem-solving, ensuring they have the required information about the computer system they are investigating and the necessary hardware and software tools. Whilst working on computer hardware learners would be expected to demonstrate the appropriate health and safety considerations.  It is recommended that learners take photographic or video evidence of their work.  Learners could also document their discovered fault, the solution and steps taken to achieve it. The tutor could ensure that the learner has tested post-fault, i.e. that the resolution has been successful.  Learner work can be organised into an informal report using screen captures and photographic or video stills as supporting evidence. Where possible problems could be sourced from realistic work-based scenarios.	3 hours	Unit 18 LO1, LO2, LO3, LO4 Unit 19 LO1, LO2, LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Documenting and keeping effective records 	The tutor could discuss with learners the need for documenting issues and their resolutions. In addition the tutor could detail the categories of information kept and whether the information is stored manually or digitally (its format). Learners could be separated into pairs and be given a simple, complex or interlinked fault to solve (this can be actively differentiated by the tutor). After completion, each pair could take time to document in detail: • Date, time, names of technicians performing repair etc • computer system details (hardware and software) • the fault as presented by the client/user • the actual cause of the fault (they may differ and must be confirmed) • the possible resolutions • the resolution actually chosen and its step-by-step solution • any external resources (downloads, websites etc including working links) or equipment (e.g. hardware or software tools) required. Pictures, videos or diagrams may also be included where appropriate. These documented resolutions could then be uploaded to an accessible location, e.g. shared network drive, virtual learning environment (VLE), file transfer protocol (FTP) site etc. The tutor could then reset the fault and rotate each pair, providing them access to the documentation provided by their peers for solving the problem. They could proceed to follow the documented guidance. Each pair could rate the documentation provided and supply constructive criticism where appropriate.	4 hours (2 x 2 hours)	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Performing post fault testing 	The tutor could stress the importance of post fault testing with learners; making sure a repair or fix has resolved the original problem without impairing the computer system function or the user's experience is a key concern. Learners could: • Test a repair/fix has resolved the identified fault • Perform adequate benchmarking (using appropriate hardware and software tools) to measure computer system performance against known specifications. Benchmarking software can include (for example): • Windows system assessment tool: https://msdn.microsoft.com • 3DMark: www.3dmark.com • Prime95: www.mersenne.org/download • Novabench: https://novabench.com/ • PCMark: https://www.futuremark.com/benchmarks/pcmark • SiSoftware Sandra: http://www.sisoftware.co.uk/ • HD Tune: www.hdtune.com Learners could take follow-up actions as required. Note: This activity may follow resolutions performed in the activities above in Learning Outcome 2 in order to reduce tutor preparation time.	2 hours	Unit 18 LO4 Unit 19 LO1, LO2, LO3

SUGGESTED ACTIVITIES

LO No:	3		
LO Title:	**Be able to provide advice and guidance to specific customers**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Consideration of communication techniques  	The tutor could issue some case study faults to learners that reflect current industry practice and offer a mix of simple, complex and interlinked types. Learners could then be asked to select the following to communicate the fault and resolution to novice, non-technical and technical clients: • communication method • level of technical language • visualisation techniques • timescales • accuracy and relevancy of information. The tutor, ideally assisted by an IT technical support specialist from industry, could then proceed to give them constructive criticism about their decisions and communication skills.	2 hours	Unit 1 LO4

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Effectiveness of technical provision – getting feedback from clients 	The tutor could introduce the idea of collecting feedback from clients, its purpose and the various techniques which can be used. These include: • Questionnaires • Verbal feedback • Face-to-face • Email • Call loggers. The tutor could task learners with the creation of offline or online mechanisms to capture feedback from clients regarding the effectiveness of technical provision. The tutor, ideally assisted by an IT technical support specialist from industry, could then proceed to give them constructive criticism about their decisions and the likely effectiveness of their feedback mechanism. Useful web links: What is Communication? http://www.skillsyouneed.com/general/what-is-communication.html Good Communication & Customer Service Basics - Beloit College https://www.beloit.edu/isr/assets/emailetiquette_cust_serv2.pdf Cloud-based online survey development: http://www.surveymonkey.co.uk Open source installable web-based survey tool: https://www.limesurvey.org/ Open source recording: http://www.orecx.com/	2 hours	Unit 6 LO2 Unit 7 LO2 Unit 11 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Effectiveness of technical provision 1	Tutors could present the concept of measuring effectiveness of IT technical support function based on: • efficiency of support delivery • available tools, equipment, software • cost • training needs. Learners could be presented with two comparable case studies which present client feedback in both statistical (quantitative) form and qualitative form. Working in small groups, learners could then compare and contrast this information with data provided about the IT technical support function. This may also involve supplementary information such as a selected SLA. Key questions may include: • How effective has the IT function been in solving client issues? • Has investment in tools, equipment and software had a bearing on client satisfaction? • Do 1st, 2nd or 3rd line staff need to be upskilled through identified training needs? • If training programmes have been purchased has this had a positive impact on the IT technical support function? • Can any costs be reduced? • Are there any identified opportunities to improve the IT technical support service?  It is likely that the tutor could lead this process acting as a facilitator as this type of process often involves a number of high level thinking skills; analysis and evaluation in particular.	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Effectiveness of technical provision 2 	Tutors could present the concept of analysing trends in IT technical support function in order to make informed recommendations. Principally this will involve analysing trends of problems and support requirements in order to reduce the occurrence of repeated incidents. Working in pairs, learners could compare a set of prepared IT technical support issues and actions to determine whether any patterns or trends can be identified. For example: • Devices failing within a particular timeframe • Failures in a particular brand or model • Incidences of repairs failing or not being effective • Reductions in types of support requests or requirements due to: – Improved user training and education – Better installation practices – Improved preventative maintenance – Improved quality control – Superior product purchasing. Learners need to be able to analyse this type of data from IT technical support logs and records, identifying trends and making recommendations which could help the IT technical support team improve their key performance indicators. It is likely that the tutor could lead this process acting as a facilitator as this type of process often involves a number of high level thinking skills; analysis and evaluation in particular.	2 hours	

The small print

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