OCR
Oxford Cambridge and RSA

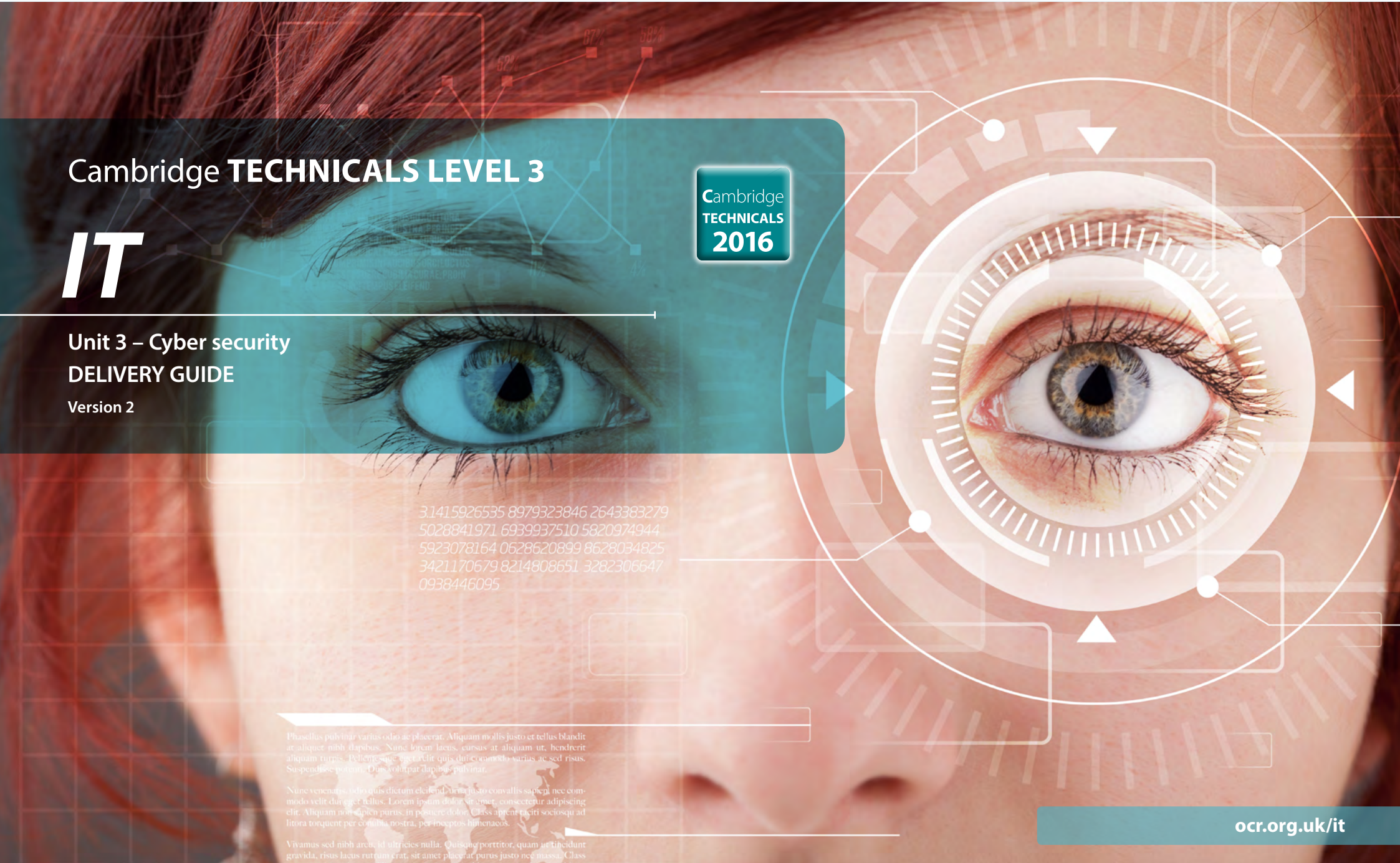
Cambridge **TECHNICALS LEVEL 3**

IT

Cambridge TECHNICALS 2016

Unit 3 – Cyber security
DELIVERY GUIDE

Version 2



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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.

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

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. 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 need for secure digital systems is more crucial than ever before. We rely on computerised systems and networks to collect, process, store and transfer vast amounts of data and to control critical systems such as water and power supplies. Business and e-commerce can be undertaken twenty four hours a day, seven days a week and telecommunications enable us to keep in touch with family and friends and collaborate with colleagues at any time. Mobile devices offer us freedom and flexibility of where and how we learn and work. However, for all the advantages that these systems offer us, some people have found ways to exploit them and this poses a threat to our safety and security in the real world, as much as in the cyber world. To deal with this problem the cyber security industry is expanding at a rapid rate.

This unit has been designed to enable you to gain knowledge and understanding of the range of threats, vulnerabilities and risks that impact on both individuals and organisations. You will learn about the solutions that can be used to prevent or deal with cyber security incidents resulting from these challenges. You will be able to apply your knowledge and understanding of cyber security issues and solutions by reviewing and making recommendations for ways to best protect digital systems and information. Learning within this unit will also support the delivery of the Cisco Cyber Security and CompTIA A+, CompTIA Security+, CompTIA Mobility+ qualifications. The unit also makes reference to UK government cyber security initiatives, for example, the UK government's The UK Cyber Security Strategy, Cyber Essentials Scheme, 10 Steps Strategy and Cyber Streetwise.

Unit 1 TITLE	
LO1	Understand what is meant by cyber security
LO2	Understand the issues surrounding cyber security
LO3	Understand the measures used to protect against cyber security incidents
LO4	Understand how to manage cyber security incidents

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/

KEY TERMS

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Access management	Managing the access to a computer system/network. It includes procedures such as account administration, account maintenance, account monitoring and the revocation of an account.
Account lockout	A software security method performed by operating system software that locks any account when a user fails a login attempt more than a set number of times. For example, system software can be set up to lock an account for several hours if the user fails the login three consecutive times in a set time frame.
Anti-malware	Software designed to prevent, detect and eradicate malicious software, such as a virus or a worm.
Anomaly based	Software that is designed to detect computer intrusions and misuse by monitoring system activity and classifying it as either normal or anomalous.
Asset	Something that is of value to a person, an organisation or a state, e.g. data, finance and secrets that should be secured against cyber security incidents.
Attacker	Individuals or organisations that target computer systems/networks illegally.
Audit trail	A record of activities on a computer system/network, for example, a record of modifications to data or access to parts of a system/network.
Availability	Data/information stored on a computer system/network must be available to authorised users and organisations and be protected from unauthorised deletion.
Biometric access	Access to a computer system/network using technologies that measure and analyse human body characteristics for authentication purposes, such as DNA, fingerprints, retinas, voice patterns, facial patterns and hand measurements.
Botnet	A network of computers infected with malicious software and controlled without the owners' knowledge, for example, to send spam or hoax emails.
Business continuity plan	A plan to continue operations that an organisation will follow if it is affected by a cyber security incident
Confidentiality	Information stored on a computer system/network must be protected against unintended or unauthorised access. Data confidentiality is a measure of the ability of a system to protect its data.
Cyber criminal	An individual who commits illegal activities using computers and the Internet.
Cyber dependant	Illegal activities dependent on the use of computers and the Internet, such as hacking or the distribution of malware on a network.
Cyber enabled	Illegal activities that could be undertaken without the use of computers, such as fraud but that are enabled by the use of computers, such as fraudulently obtaining money for goods online.

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Cyber security	Refers to technologies, processes and practices designed to protect computers, networks, software and data from attack, damage or unauthorised access and aims to protect data confidentiality, integrity and availability.
Cyber security incident	An unwanted/unexpected event, such as an intrusion into a computer system/network, such as the spread of malware.
Cyber security incident report	A report that documents the details of a cyber security incident, such as the type of incident, when it occurred, how it was performed, etc.
Denial of service	An attempt to disrupt a network/business/organisation by issuing more requests than a system is able to cope with, it can be performed with malicious intent or as a protest.
Disaster recovery plan	A plan that documents a set of procedures for an organisation to follow in order to recover and protect a computer system and its data in the event of a cyber security incident.
Encryption	A method that is used to attempt to ensure data security by use of encrypted (secret) code. In order to read the contents of an encrypted message or file, someone must have access to a secret key or password that will enable them to decrypt the message or file.
Escalation of privileges	Exploiting a weakness or weaknesses in an operating system or software application, such as a bug, design flaw or configuration oversight and gaining elevated access to resources that are normally protected.
Ethical hacking	An individual who attempts to penetrate a computer system/network on behalf of its owners for the purpose of finding security vulnerabilities that a malicious hacker could potentially exploit. He or she is also known as a white hat hacker. He or she can also work alone.
Firewall	Software that is designed to protect a computer system/network from unauthorised access and intrusion.
Fuzzing	A method that is used to test the security of software.
Hacking	A method of gaining unauthorised access to a computer system/network.
Hacker	An individual who gains unauthorised access to a computer system/network.
Hacktivist	An individual who gains unauthorised access to computer system/network for social or political purposes.
Hoax email	Usually an email message warning recipients of a non-existent threat, usually forging quotes supposedly from authorities such as Microsoft and IBM.

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Honeypot	Decoy servers or computer systems that are set up to gather information on intruders or attackers of computer systems/networks.
Host firewall	Software that runs on a single host computer that restricts incoming and outgoing network activity for that host computer only. It can be used to prevent a host computer from becoming infected and stop infected host computers from spreading malware to other hosts computers.
Insider	An individual working inside an organisation, a trusted employee, who performs an illegal action, such as hacking.
Integrity	Integrity of data aims to protect data from unauthorised modification.
Intrusion detection system	Software that monitors network or system activities for unexpected or malicious activities.
Intrusion prevention system	Software that examines network traffic flows to detect and prevent vulnerability exploits.
Malware	Software that is designed to cause disruption or damage to data and/a computer system/network.
Mitigate	To lessen an impact, for example, the impact of a cyber security incident or a risk.
Patch management	Acquiring, testing and installing code changes or patches to software on a computer system/network.
Penetration testing	A software tool that tests a computer system/network to find vulnerabilities that could be exploited by an attacker.
Phisher	An individual that attempts to acquire personal information, often for malicious reasons, such as fraud, by pretending to be a known and trusted individual or organisation.
Phishing	The act of attempting to acquire personal information, often for malicious reasons, such as fraud, by pretending to be a known and trusted individual or organisation.
Non repudiation	Ensures that an individual cannot deny the authenticity of their signature on a document or the sending of a message that they sent.

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Risk	A threat to a computer system/network can result in a risk, for example, if a hacker gains access to a person's computer, there is a risk that data will be stolen.
Risk analysis	This involves analysing a computer system or a set of procedures and assessing whether a system is at risk from a cyber incident due to weaknesses or vulnerabilities in software, hardware or procedures.
Risk management	This refers to ensuring that risks are monitored carefully and mitigated against or eliminated from a computer system/network.
Sandboxing	This is a security method for separating running programs on a computer system/network. It is often used to run untested code, or untrusted programs from unknown sources such as suppliers, untrusted users and untrusted websites.
Scammer	An individual who attempts to gain, for example, money from another person by fraudulent means enabled by the use of computers and the Internet.
Script kiddie	An individual who uses existing computer scripts or codes to hack into computer systems. They do not have the expertise to write their own code.
Signature based	A digital signature is code that is attached to an electronically transmitted document to verify its contents and the sender's identity.
Social engineering	Hackers use this non-technical method to access computer systems/networks without authorisation. It involves fooling people into breaking normal security procedures, such as guarding their passwords and relies on manipulating the good nature of individuals.
Spyware	Malware software that is designed to obtain covert information about someone else's computer activities by transmitting data covertly, from their hard drive, for example key logging software.
Threat	An action that when performed on a computer system/network can cause destruction or disruption, for example, a hack or malware.
Unauthorised access	Gaining access into a computer system/network illegally.
Virus	Malicious software which is capable of copying itself and corrupting computer systems/networks or destroying data.
Vulnerability	Is a weakness in a computer system/network that can be exploited by a threat, for example, out of date anti-malware software can result in the threat of a malware attack. If a computer system/network's vulnerabilities can be found and dealt with, this will help to minimize threats and risks.
Vulnerability broker	An individual who exploits a vulnerability or weakness in a computer system/network for gain, for example, a hacker.

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 difference between vulnerability, threat and risk	Learners often confuse the terms vulnerability, threat and risk. Explanations and examples, such as those referred to in the resources link, may be a way for learners to understand and remember the difference.	Assessment Types - CompTIA Security+ SY0-401: 3.7 CompTIA https://www.youtube.com/watch?v=KXuKFckeHzs A video that discusses the differences between risks, vulnerabilities and threats.
The difference between a virus, a worm, a Trojan and a bot	Learners sometimes do not understand the differences between a virus, a worm, a Trojan and a bot. Explanations and examples, such as those referred to in the three resources links, may be a way for learners to understand and remember the differences between the terms.	What Is the Difference: Viruses, Worms, Trojans, and Bots? Cisco http://www.cisco.com/web/about/security/intelligence/virus-worm-diffs.html A webpage that discusses the differences between viruses, worms, Trojans, and Bots? Malware Overview - CompTIA Security+ SY0-401: 3.1 CompTIA https://www.youtube.com/watch?v=fpx5mym4Lfg A short video that discusses types of malware. Botnets - CompTIA Security+ SY0-401: 3.1 CompTIA https://www.youtube.com/watch?v=Z8KtojO5eGI A short video that discusses what Botnets are and how they work.

SUGGESTED ACTIVITIES

LO No:	1		
LO Title:	**Understand what is meant by cyber security**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Confidentiality, integrity and availability of digital systems	Tutors could begin by introducing learners to the terms *confidentiality, integrity and availability* in the context of cyber security and check that they understand what is meant by each term in this context. The following web page provides a broad definition of cyber security that makes reference to confidentiality, integrity and availability http://www.itu.int/en/ITU-T/studygroups/2013-2016/17/Pages/cybersecurity.aspx Learners could be tasked to research several examples of cyber security incidents and document the following: Incidents where confidentiality has been compromised Incidents in which integrity has been compromised Incidents in which availability has been compromised Incidents in which a combination of confidentiality, integrity and availability have been compromised. Learners could refer to the following resources: NHS has repeated data breaches http://www.bbc.co.uk/news/health-30037938 UK sales teams are the most exposed to cyber attacks, study reveals http://www.computerweekly.com/news/4500249735/UK-sales-teams-are-the-most-exposed-to-cyber-attacks-study-reveals Top US Official Quits After Massive Government Hack http://www.securityweek.com/top-us-official-quits-after-massive-government-hack-0 Catching the Big Phish: What Are the Security Risks Facing Financial Organisations? http://www.huffingtonpost.co.uk/david-emm/security-risks-facing-financial-organisations_b_7601596.html	1 – 2 hours	Unit 3 LO2, LO3 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Confidentiality, integrity and availability of digital systems 	Ryanair remains tight-lipped over £3.3m hacker theft http://www.computerweekly.com/news/4500245366/Ryanair-remains-tight-lipped-over-33m-hacker-theft Internet of things: businesses must overcome data and privacy hurdles http://www.theguardian.com/media-network/2015/jun/01/internet-of-things-businesses-data-privacy Smart TVs pose major security risk to government, healthcare and energy companies http://www.ibtimes.co.uk/samsung-smart-tvs-pose-major-security-risk-government-healthcare-energy-companies-1504223 Learners also could be tasked to document instances of when the confidentiality, integrity and availability of their data and/or the data of someone that they know, has been compromised. Learners could present their findings and/or personal experiences in the form of a report.	1 – 2 hours	Unit 3 LO2, LO3 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2
The importance of keeping data secure 	Tutors could begin by introducing learners to the different types of data that need to be kept secure: personal data, an organisation's data and a state or country's data. Learners could work in pairs or small groups and list as many types of personal data, organisational data and national data as possible. Learners could present their findings to the rest of the class which could then encourage discussion. They could then consider cases in which data has been compromised: https://www.youtube.com/watch?v=0p3787JiFgQ A short video (8 minutes) by VM news, '10 Cyber Security Facts'. The following video (42 minutes), 'Secret International Cyber War Dividing Nations' presents an overview of the issue of cyber war and the battle for data held by organisations and countries. https://www.youtube.com/watch?v=zAS-agcQqEk	1 hour	Unit 3 LO2, LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Types of cyber security incidents See lesson element Types of cyber security incidents 	Tutors could begin by introducing learners to the term *cyber security incident* and the types of incidents that can occur. Learners could be tasked to research the following types of cyber security incidents and provide details of at least one example of each type of incident that they research. Hacking Disclosure of government information Impairing the operation of a digital system Denial of service Malware Identity theft Learners could refer to the following resources: BBC News: Cyber Security http://www.bbc.co.uk/news/technology-28549494 Computer Weekly http://www.computerweekly.com Security Week http://www.securityweek.com/cybercrime The Huffington Post http://www.huffingtonpost.co.uk/news/cybersecurity/ The Telegraph http://www.telegraph.co.uk/technology/internet-security/ The Guardian http://www.theguardian.com/small-business-network/series/cyber-security International Business Times: Cyber Security http://www.ibtimes.co.uk/cybersecurity All your devices can be hacked, an article that provides an overview of the problems of cyber crime. http://www.ted.com/talks/avi_rubin_all_your_devices_can_be_hacked NATO and cyber security, Information by NATO on the cyber security issues that it faces. http://www.nato.int/cps/en/natolive/topics_78170.htm Learners could present their findings in the form of a presentation.	1 – 2 hours	Unit 3 LO2, LO3 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

SUGGESTED ACTIVITIES

LO No:	2		
LO Title:	**Understand the issues surrounding cyber security**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Weaknesses that leave a digital system vulnerable to attack 	Tutors could begin by introducing the term *vulnerability* and check that learners understand its meaning. Learners could be tasked with assessing the software, hardware, network and people vulnerabilities of the systems that they use in school/college/work/home. Learners could refer to the following resource: A video (39 minutes) on Security Concepts: Computer Security Lectures 2014/15 S2, An overview of cyber security issues (Leeds Beckett University) https://www.youtube.com/watch?v=pLEVNl8KtO4&list=PLUhmDd3hiISlAbnD8eWlDjetsj1eJmiZs A video (5 minutes) on Social Engineering - CompTIA Network+ N10-006 - 3.2, A short introduction to the issue of social engineering. https://www.youtube.com/watch?v=xcJV2JGeVn0 They could present their findings in the form of a report or an information leaflet.	2 hours	Unit 3 LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2
The types of threats that digital systems face 	Tutors could begin by introducing the term *threat* and check that learners understand its meaning. Tutors could then introduce the types of threat that digital systems face. Learners could be tasked with reading through the Sophos guide to computer and data security threats. Sophos Threatsaurus The A-Z of computer and data security threats https://www.sophos.com/en-us/medialibrary/PDFs/other/sophosthreatsaurusaz.pdf?la=en	2 hours	Unit 3 LO1, LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
	Learners could be tasked with reading the following GCHQ document: Cert UK Common Cyber Attacks: Reducing the Impact https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400106/Common_Cyber_Attacks-Reducing_The_Impact.pdf Learners could also be shown the following videos: New Threats and Security Trends - CompTIA Security+ SY0-401: 2.6 A short introduction to threats and emerging cyber security concerns. A video (2 minutes) https://www.youtube.com/watch?v=Tec1Yg7HMMg Introduction to Computer Security - Information Security Lesson #1 of 12 Discusses threats, risks, vulnerabilities, types of attackers, targets and impacts A video (41 minutes) https://www.youtube.com/watch?v=zBFB34YGK1U Learners could then be tasked with creating a quiz of at least ten questions based on the information that they have read and watched/listened to. Learners could then present their quiz and the class could work through the questions.		
Types of attacks to digital systems 	Tutors could begin by introducing the term *attack* in the context of cyber security and check that learners understand the meaning in this context. Tutors could then introduce the types of cyber attacks that digital systems face. Learners could be tasked to document information on cyber attacks – they could create a 'top ten' in order of severity of impact. Learners could refer to the following resources: Net Losses: Estimating the Global Cost of Cybercrime Economic impact of cybercrime II. A detailed overview of the impacts and costs of cybercrime. A pdf document http://www.mcafee.com/us/resources/reports/rp-economic-impact-cybercrime2.pdf 25 Biggest Cyber Attacks In History - Discusses cyber security incidents A video (14 minutes) https://www.youtube.com/watch?v=Zl_BQoJqClM Learners could present the details of their top ten in the form of a presentation or information leaflet.		

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Types of malware 	Tutors could begin by introducing the term *malware* and check that learners understand its meaning. Learners could be tasked to work in pairs or small groups and research the following malware (one example per pair or group): Zero Day. Heartbleed. Stuxnet. SQL Injection. Learners could refer to the following resources: Malicious Code (Malware) - Information Security Lesson #4 of 12 - an introduction to malicious malware. A video (30 minutes) https://www.youtube.com/watch?v=wn-uVP8HncA Zero-day Attacks - CompTIA Network+ N10-006 - 3.2 - an overview of the issue of Zero Day malware. A video (4 minutes) https://www.youtube.com/watch?v=KG8kFakfS7w SQL Injection, XML Injection, and LDAP Injection - CompTIA Security+ SY0-401: 3.5 - an introduction to the issue of malware injections. A video (5 minutes) https://www.youtube.com/watch?v=Tjc6xYjh46g Heartbleed malware - an introduction to the issue of Heartbleed malware. A Web page http://www.interpol.int/Crime-areas/Cybercrime/Advice/Heartbleed-bug An Unprecedented Look at Stuxnet, the World's First Digital Weapon - a discussion of Stuxnet malware. A Web page http://www.wired.com/2014/11/countdown-to-zero-day-stuxnet/ Learners could present their findings to the rest of the class in the form of a presentation or create an information leaflet.	2 hours	Unit 3 LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Don't go phishing! See lesson element Don't Go Phishing! 	Tutors could begin by introducing the term *phishing* and check that learners understand its meaning. Learners could be tasked to work in pairs or small groups and research types of phishing. Learners could refer to the following resources: http://www.net-security.org/secworld.php?id=18153 An example of a phishing scam that affected Virgin Media customers in March 2015. It presents a fake PayPal phishing page. http://www.net-security.org/secworld.php?id=18153 A video produced by CompTIA. It is a short introduction to man-in-the-middle attacks https://www.youtube.com/watch?v=p4pLVN_hVsU A video produced by CompTIA. It is a short introduction to vishing. https://www.youtube.com/watch?v=aL_m6jelF1M A video produced by CompTIA. It is a short introduction to whaling. https://www.youtube.com/watch?v=lasCyIKGwIA This discusses spear phishing in some detail. http://www.cpni.gov.uk/documents/publications/2013/2013053-spear-phishing-understanding-the-threat.pdf?epslanguage=en-gb This discusses how to recognize phishing email messages or links. https://www.microsoft.com/en-gb/security/online-privacy/phishing-symptoms.aspx This web page discusses phishing. http://www.actionfraud.police.uk/fraud-az-phishing This web page discusses spear phishing. https://www.fishnetsecurity.com/6labs/blog/tip-spear-phishing-or-spearphishing This web page discusses whaling. http://www.scambusters.org/whaling.html Learners could then be tasked with presenting their findings to the rest of the class.	2 hours	Unit 3 LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO1

Title of suggested activity	Suggested activities	Suggested timings	Also related to
A rogues' gallery 	Tutors could begin by introducing the term *attacker* in the context of cyber security and check that learners understand its meaning in this context. Learners could be tasked with creating a 'rogues gallery' of digital system attackers. The 'gallery' could include reference to six types of attackers and for each type of attacker, there should be an example included of the type of attack that they are associated with undertaking. Learners could refer to the following resource: Insider Threats - CompTIA Network+ N10-006 - 3.2 - an introduction to the issue of threats posed by 'insiders'. A video (4 minutes) https://www.youtube.com/watch?v=Urc-My8AnBY Introduction to Computer Security - Information Security Lesson #1 of 12 Discusses threats, risks, vulnerabilities, types of attackers, targets and impacts A video (41 minutes) https://www.youtube.com/watch?v=zBFB34YGK1U Police shut down network 'used to steal bank details', February 2015 An online new article. http://www.bbc.co.uk/news/technology-31622306 Learners could present their work to the class in the form of a presentation.	2 hours	Unit 3 LO1, LO3, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2
Why digital systems are attacked 	Learners could be tasked with creating a game or a quiz in which other learners are asked to match a profile/characteristic to a type of digital system attacker. Learners could refer to the following resource: The secret lives of hackers – A short introduction to hacking – who does it and what are their motivations? A video (3 minutes) www.youtube.com/watch?v=DKzi5CYNFAg Learners could present their game or quiz and the other learners could attempt to match the profile/ characteristic to the perpetrator of an attack.	1 – 2 hours	Unit 3 LO1, LO4 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Is hacking ever ethical? 	Tutors could begin by introducing the term *ethical hacking* and check that learners understand its meaning. Tutors could then introduce the term hacktivism and check that learners understand its meaning. Learners could be tasked to work in pairs or small groups and document their responses to the question *is hacking ever ethical?* Learners could refer to the following resources: The Law and Ethics http://www.bigambition.co.uk/secure-futures/resources/teachers3/ These resources include a session plan, a presentation, questions and answers relating to hacking and the law, ethical dilemmas discussions, different types of hackers and a questions and answers. Learners could present their responses to the class in the form of a presentation.	1 – 2 hours	Unit 3 LO1
Should emails be monitored? 	Tutors could begin by introducing the term *surveillance* and check that learners understand its meaning. Learners could be tasked to work in pairs/groups and document their responses to the question *should emails be monitored?* Learners could refer to the following resource: Personal Privacy and Security: Computer Security Lectures 2014/15 S2 – An overview of personal privacy and cyber security. (Leeds Beckett University). A video (39 minutes) https://www.youtube.com/ watch?v=ffLIhPszqbo&list=PLUhmDd3hiISlAbnD8eWlDjetsj1eJmiZs&index=2 A sensible way forward on surveillance? An online article that discusses the issue of surveillance. http://www.bbc.co.uk/news/uk-33092737 Learners could present their responses to of the class in the form of a presentation.	1 – 2 hours	Unit 3 LO1

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Legal requirements 	Tutors could begin by introducing the role of law in cyber security and check that learners understand the part that law plays in cyber security. Learners could be tasked to work through the following resources: The Law and Ethics http://www.bigambition.co.uk/secure-futures/resources/teachers3/ These resources include a session plan, a presentation, questions and answers relating to hacking and the law, ethical dilemmas discussions, different types of hackers and a questions and answers.	1 – 2 hours	Unit 3 LO1, LO3 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 17 LO2 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1 Unit 22 LO2

SUGGESTED ACTIVITIES

LO No:	3		
LO Title:	**Understand the measures used to protect against cyber security incidents**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Identifying assets 	Tutors could begin by introducing the term *asset* in the context of cyber security and check that learners understand its meaning in this context. Learners could be tasked with listing their personal assets. Learners could also be tasked with listing the assets of a local/national business or industry. Learners could present their work in the form of an inventory.	1 hour	Unit 3 LO1, LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2
Identifying risks 	Tutors could begin by introducing the term *risk* in the context of cyber security and check that learners understand its meaning in this context. Learners could be tasked with assessing the risks if their assets are impacted by a cyber security incident. Learners could also be tasked with assessing the risks if the assets of a local or national business or industry are impacted by a cyber security incident. Learners could refer to the following resource: Cyber Risks An overview of the risks to cyber security. A video (36 minutes) https://www.youtube.com/watch?v=K1BKhPzW8TA Introduction to Risk Assessment – an overview of risk assessment. A video (57 minutes) https://www.youtube.com/watch?v=EWdfovZIg2g Learners could present their work in the form of an information leaflet.	1 hour	Unit 3 LO1, LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Testing and monitoring digital systems 	Learners could be given the opportunity to work on a machine(s) that that offers desktop virtualisation and check that software patches are up to date, create passwords on files, implement access levels linked to usernames and capture evidence of a threat or attempt at illegal access. Learners could also refer to the following resources: Vulnerability Scanning – CompTIA Security+ SY0-401: 3.8 – an introduction to vulnerability testing. A video (8 minutes) https://www.youtube.com/watch?v=kC3Egfl53VE Fuzzing – CompTIA Security+ SY0-401: 4.1 – an introduction to the fuzzing technique of testing. A video (4 minutes) https://www.youtube.com/watch?v=CdAekWEN4wA Denial of Service and Intrusion Detection – Information Security Lesson #11 of 12 – an overview of denial of service and intrusion detection. A video (27 minutes) https://www.youtube.com/watch?v=0_59AocrBVo The Honeypot Project – an overview of the use of honeypots. A website http://www.honeynet.org/ Cisco Network-Based Intrusion Prevention Case Study on network-based intrusion prevention. Web pages http://www.cisco.com/web/about/ciscoitatwork/security/csirt_network-based_intrusion_prevention_system_web.html	1 – 2 hours	Unit 3 LO1, LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Physical controls that can be used to secure digital systems 	Learners could be presented with a scenario/case study of a fictitious company OR make reference to a real, well known company and tasked to recommend physical controls that they would expect the company to use to secure their data. Learners could refer to the following resource: Physical Security Controls – CompTIA Network+ N10-006 – 3.4 – an introduction to physical security controls. A video (5 minutes) https://www.youtube.com/watch?v=xatI10UGTRU Learners could present their recommendations in the form of an information guide for a small business.	1 hour	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2
Hardware controls used to secure digital systems 	Learners could be presented with a scenario/case study of a fictitious company. Alternatively or in addition, they could make reference to a digital system that they use and/or a digital system used by a well-known organisation. They could be tasked to recommend hardware controls that they would expect an organisation to use to secure their data. If discussing their own digital system, they could be tasked to suggest what hardware controls they should have in place. Learners could refer to the following resources: Hardware Security – CompTIA Security+ SY0-401: 4.3 – An introduction to hardware security controls. A video (4 minutes) https://www.youtube.com/watch?v=BqvV6SOBVLs Learners could be asked to apply their knowledge of hardware controls to produce a guide recommending the use of hardware controls to staff at an organisation. If they are making reference to their own digital system, they could provide information in the form of a presentation.	1 hour	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Software controls used to secure digital systems See lesson element *Software controls used to secure digital systems* 	Learners could be presented with a scenario/case study of a fictitious company. Alternatively or in addition, they could make reference to a digital system that they use and/or make reference to a digital system that is used by a well-known organisation. They could be tasked to recommend software controls that they would expect an organisation to use to secure their data. If discussing their own digital system, they could be tasked to suggest what software controls they should have in place. Learners could refer to the following resource: https://www.youtube.com/watch?v=7Kq1bBxUqLM This video presents a short introduction to anti-malware software. https://www.youtube.com/watch?v=XEqnE_sDzSk This video presents an overview of firewalls and network security. https://www.youtube.com/watch?v=pT_aSqHq3hU This video produced by CompTIA, presents a short introduction to operating system security and settings. https://www.youtube.com/watch?v=lDCgSbrKKGc This video produced by CompTIA, presents a short introduction to patch management. https://www.youtube.com/watch?v=wu3CNkaoVmI This video produced by CompTIA, presents a short introduction to managing password policies. http://www.cpni.gov.uk/advice/cyber/Patching/ The above web page discusses the importance of patching to prevent against an attack to software. http://www.itgovernance.co.uk/boundary-firewalls-and-internet-gateways.aspx#.VZfRkFLD9sE The above web pages discuss the importance of firewalls. http://www.itgovernance.co.uk/patch-management.aspx#.VzfWa1LD9sE The above web pages discuss software vulnerabilities and a related case study. http://www.itgovernance.co.uk/malware-protection.aspx#.VZfW2VLD9sE The above web pages discuss the importance of malware protection.	1 – 2 hours	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
	http://www.microsoft.com/security/portal/threat/threats.aspx The above web pages produced by Microsoft discuss the importance of malware protection. http://www.sans.org/critical-security-controls/control/5 The above web pages discuss the importance of malware. http://www.sans.org/critical-security-controls/control/6 The above web pages discuss the importance of securing application software. Learners could present their recommendations in the form of a presentation.		
Data controls used to secure digital systems  	Learners could be presented with a scenario/case study of a fictitious company OR make reference to a real, well known company and tasked to recommend data controls that they would expect the company to use to secure their data. Learners could refer to the following resource: States of Data – CompTIA Security+ SY0-401: 4.4 – an introduction to securing data in-transit, at-rest, and in-use. A video (5 minutes) https://www.youtube.com/watch?v=OfWZmxrvUgI Learners could present their recommendations in the form of an information guide for a small business moving into e-commerce.	1 hour	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Encryption controls used to secure digital systems	Tutors could begin by introducing the term *encryption* and check that learners understand its meaning. Learners could work in pairs or small groups and each pair or group tasked with researching two commonly used methods of encryption. Learners could refer to the following resources: Encryption Concepts – Information Security Lesson #6 of 12 – an overview of encryption techniques. A video (1 hour) https://www.youtube.com/watch?v=qcai6ZY6sVs Encryption Part I: Introduction to Encryption 1 – an overview of asymmetric encryption and hashing. A video (12 minutes) https://www.youtube.com/watch?v=KEWGoXE6zMo Data Encryption – CompTIA Security+ SY0-401: 4.4 - an introduction to data encryption. A video (8 minutes) https://www.youtube.com/watch?v=7Cfinirgcl4 Hardware-based Encryption – CompTIA Security+ SY0-401: 4.4 – an introduction to hardware based encryption. A video (6 minutes) https://www.youtube.com/watch?v=eWCCYXywfOI Cryptography Overview – CompTIA Security+ SY0-401: 6.1 – an introduction to cryptography. A video (8 minutes) https://www.youtube.com/watch?v=W5su65wwd0g  Non-Repudiation – CompTIA Security+ SY0-401: 6.1 – an introduction to non-repudiation and digital signatures.	1 – 2 hours	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
	A video (5 minutes) https://www.youtube.com/watch?v=4w2MTKx4d6A Steganography – CompTIA Security+ SY0-401: 6.1 - an introduction to steganography. A video (4 minutes) https://www.youtube.com/watch?v=WIYdHRNeHEA Strong vs. Weak Encryption – CompTIA Security+ SY0-401: 6.2 – an introduction to strong and weak encryption techniques. A video (3 minutes) https://www.youtube.com/watch?v=h7QwYjZ0sz0 Learners could present their findings in the form of a report or a presentation.		
Controls that are required for personal devices 	Learners could be tasked to produce an information leaflet for learners and staff that makes them aware of the device controls that they should follow when bringing their own devices to school/ college. Alternatively or in addition, learners could be tasked to produce an information leaflet for staff at a workplace that makes them aware of the device controls that they should follow when bringing their own devices to work. Learners could refer to the following resources: Mobile BYOD Concerns – CompTIA Security+ SY0-401: 4.2 – an introduction to the issues of security and bringing devices to work. A video (8 minutes) https://www.youtube.com/watch?v=hiHLGSTCDf8 Mobile Application Security – CompTIA Security+ SY0-401: 4.2 – an introduction to mobile application security. A video (6 minutes) http://how-tofind.com/tube/2D6vtgwZvn0/mobile-device-security-comptia-security-sy0-301-4-2 Mobile Device Security – CompTIA Security+ SY0-401: 4.2 – an introduction to mobile device security. A video (4 minutes) https://www.youtube.com/watch?v=4j4hRCnMjEw Learners could present their findings in the form of a report, an information guide or a presentation.	1 – 2 hours	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Procedures to keep data secure 	Learners could be tasked to produce a set of procedures that everyone at home needs to follow when using a digital system. Alternatively or in addition, learners could be tasked to produce a set of procedures that staff and learners at school/college need to follow or staff in a workplace when using digital systems. Learners could refer to the following resources: Data Policies – CompTIA Security+ SY0-401: 4.4 – an introduction to policies to secure data. A video (5 minutes) https://www.youtube.com/watch?v=K6VudXYafZw Managing Password Policies – CompTIA Security+ SY0-401: 5.3 - an introduction to managing password policies. A video (4 minutes) https://www.youtube.com/watch?v=wu3CNkaoVmI Privileges – CompTIA Security+ SY0-401: 5.3 – an introduction to user privileges. A video (4 minutes) https://www.youtube.com/watch?v=NXOQMGYuwuo User Access Reviews and Monitoring – CompTIA Security+ SY0-401: 5.3 - an introduction to user access reviews and monitoring. A video (4 minutes) https://www.youtube.com/watch?v=HvMJRFYn7Ik Access control and administrative privilege management – an overview of risks associated with access control and administrative privilege management and a related case study. Web pages http://www.itgovernance.co.uk/access-control-and-administrative-privilege.aspx#.VZfUBFLD9sE Bring your own devices (BYOD) – an overview of BYOD issues. PDF document https://ico.org.uk/media/for-organisations/documents/1563/ico_bring_your_own_device_byod_guidance.Pdf Account monitoring and control – an overview of account monitoring and control. Web pages http://www.sans.org/critical-security-controls/control/16 Learners could present their work in the form of an information guide to an organisation.	1 – 2 hours	Unit 3 LO2, LO4 Unit 1 LO5 Unit 2 LO4, LO6 Unit 4 LO1, LO2, LO3 Unit 7 LO2 Unit 11 LO2 Unit 12 LO1 Unit 18 LO2 Unit 19 LO1, LO2 Unit 20 LO2 Unit 21 LO1, LO2 Unit 22 LO2

SUGGESTED ACTIVITIES

LO No:	4		
LO Title:	**Understand how to manage cyber security incidents**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
How to respond to a cyber security incident at home 	Tutors could begin by introducing learners to the different procedures that should be followed in the event of a cyber security incident. Learners could be tasked to document how they would respond to a cyber security incident that happened at home. Learners could refer to the following resource: Live System Analysis – part 2: Computer Security Lectures 2014/15 S1 – discusses how to respond to a cyber security incident A video (25 minutes) https://www.youtube.com/watch?v=7MhCz6KI1To Learners could present their work in the form of a report, an information leaflet or a presentation.	1 hour	Unit 3 LO3
How to respond to a cyber security incident at school/ college 	Tutors could begin by introducing learners to the different procedures that should be followed in the event of a cyber security incident. Learners could be tasked to document how they would respond to a cyber security incident that happened at school/college. Learners could refer to the following resources: Cisco's Computer Security Incident Response Team (CSIRT) - An overview of CSIRT. Web page https://tools.cisco.com/security/center/emergency.x?i=56#3 CSIRT Monitoring for the Cisco House at the London 2012 Olympics Games A video that presents a discussion of cyber security and the London 2012 Olympics Games. http://www.youtube.com/watch?v=Hx8iGQIJ-aQ	1 hour	Unit 3 LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
	A video that presents a discussion of cyber security and the London 2012 Olympics Games. http://www.youtube.com/watch?v=Hx8iGQIJ-aQ Cisco's Playbook Web page https://blogs.cisco.com/security/using-a-playbook-model-to-organize-your-information-security-monitoring-strategy/ Using a Playbook Model to Organize Your Information Security Monitoring Strategy. CREST: Cyber Security Incident Response - an overview of how to respond to a cyber security incident. A pdf document https://www.crest-approved.org/wp-content/uploads/2014/11/CSIR-Procurement-Guide.pdf Incident response and management - an overview of incident and response management. Web page http://www.sans.org/critical-security-controls/control/18 Learners could present their work in the form of a report, an information leaflet or a presentation.		
How to respond to a cyber security incident at a work place  	Tutors could begin by introducing learners to the different procedures that should be followed in the event of a cyber security incident. Learners could be tasked to document how they would respond to a cyber security incident that happened at a workplace. Learners could refer to the following resources: Cisco's Computer Security Incident Response Team (CSIRT) - An overview of CSIRT. Web page https://tools.cisco.com/security/center/emergency.x?i=56#3 CSIRT Monitoring for the Cisco House at the London 2012 Olympics Games A video that presents a discussion of cyber security and the London 2012 Olympics Games. http://www.youtube.com/watch?v=Hx8iGQIJ-aQ	1 hour	Unit 3 LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
	Cisco's Playbook Web page https://blogs.cisco.com/security/using-a-playbook-model-to-organize-your-information-security-monitoring-strategy/ Using a 'Playbook' Model to Organize Your Information Security Monitoring Strategy CREST has produced the Cyber Security Incident Response Guide – an overview of how to respond to a cyber security incident. A pdf document https://www.crest-approved.org/wp-content/uploads/2014/11/CSIR-Procurement-Guide.pdf Incident response and management – an overview of incident and response management. Web page http://www.sans.org/critical-security-controls/control/18 Learners could present their work in the form of a report, an information leaflet or a presentation.		
How to produce a cyber security incident report for a cyber security at a work place.  	Tutors could begin by introducing the various stages of investigation that should be undertaken and documented when producing a cyber security incident report. Learners could be presented with a cyber security scenario in a workplace. Learners could then be tasked with investigating the incident and producing a cyber security incident report that documents details of the incident. Learners could refer to the following resource: 2014 Cyber Security Session 24 – Cyber Security Incident Response – an overview of how to respond to a cyber security incident. A video (39 minutes) https://www.youtube.com/watch?v=gAb8G0Poj5Y	1 hour	Unit 3 LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
How to investigate a cyber security incident at a work place and document the details 	Tutors could begin by introducing the various stages of investigation that should be undertaken and documented when producing a cyber security incident report. Learners could be tasked to produce a guide that teaches members of staff at an organisation how to investigate a cyber security incident. Learners could refer to the following resource: 2014 Cyber Security Session 24 – Cyber Security Incident Response – an overview of how to respond to a cyber security incident. A video (39 minutes) https://www.youtube.com/watch?v=gAb8G0Poj5Y	1 hour	Unit 3 LO3

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 3)	Title of suggested activity	Other units/LOs	
LO1	**Confidentiality, integrity and availability of digital systems**	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO3 Understand measures used to protect against cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	The importance of keeping data secure	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO1	**The importance of keeping data secure - continued**	Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Types of cyber security incidents	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**Weaknesses that leave a digital system vulnerable to attack**	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	The types of threats that digital systems face	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
		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

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**The types of threats that digital systems face - continued**	Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Types of attacks to digital systems	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**Types of attacks to digital systems - continued**	Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Types of malware	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**Don't go phishing!**	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**A rogues' gallery**	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO3 Understand measures used to protect against cyber security incidents
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Why digital systems are attacked	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**Why digital systems are attacked - continued**	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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Is hacking ever ethical?	Unit 3 Cyber security	LO1 Understand what is meant by cyber security
	Should emails be monitored?	Unit 3 Cyber security	LO1 Understand what is meant by cyber security
	Legal requirements	Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO3 Understand measures used to protect against cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 17 Internet of everything	LO2 Be able to repurpose technologies to extend the scope of the IoE
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO2	**Legal requirements - continued**	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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
LO3	**Identifying assets**	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Identifying risks**	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Testing and monitoring digital systems	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understamd the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
			LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Testing and monitoring digital systems - continued**	Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Physical controls that can be used to secure digital systems	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Physical controls that can be used to secure digital systems - continued**	Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Hardware control used to secure digital systems	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Software controls used secure digital systems**	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Data controls used to secure digital systems**	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Encryption controls used to secure digital systems**	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Controls that are required for personal devices	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		Unit 7 Data analysis and design	LO2 Be able to investigate client requirements for data analysis

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Controls that are required for personal devices - continued**	Unit 11 Systems analysis and design	LO2 Be able to use investigative techniques to establish requirements for business systems
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems
		Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
	Procedures to keep data secure	Unit 1 Building positive relationships in health and social	LO5 Understand ethical and operational issues and threats to computer systems
		Unit 2 Global information	LO4 Understand the legal and regulatory framework governing the storage and use of global information
			LO6 Understand the principles of information security
		Unit 3 Cyber security	LO2 Understand the issues surrounding cyber security
			LO4 Understand how to manage cyber security incidents
		Unit 4 Computer networks	LO1 Understand the concept of networks
			LO2 Be able to plan computer networks to meet client requirements
			LO3 Be able to present network solutions to clients
		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
		Unit 12 Mobile technology	LO1 Understand mobile technologies
		Unit 18 Computer systems – hardware	LO2 Be able to propose a computer system for identified business requirements
		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
		Unit 20 IT technical support	LO2 Be able to diagnose faults and solutions for computer systems

This unit (Unit 4)	Title of suggested activity	Other units/LOs	
LO3	**Procedures to keep data secure - continued**	Unit 21 Web design and prototyping	LO1 Understand the fundamentals of web design
			LO2 Be able to plan the development of an interactive website for an identified client
		Unit 22 Big data analytics	LO2 Be able to process Big Data for business purposes
LO4	**How to respond to a cyber security incident at home**	Unit 3 Cyber security	LO3 Understand measures used to protect against cyber security incidents
	How to respond to a cyber security incident at school/college		
	How to respond to a cyber security incident at work		
	How to produce a cyber security incident report for a cyber security incident at a work place		
	How to investigate a cyber security incident at a work place and document the details		

The small print

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