



T-LEVELS
THE NEXT LEVEL QUALIFICATION

T Level resource improvement project

**Supporting holistic delivery: developing learning
activities to integrate core and occupational
specialism content**

Association of Colleges is working in partnership with the Education and Training Foundation to deliver this offer. This programme is funded by the Department for Education.

Session 4: Lesson plan

Learning objectives	Types and application of access control methods for managing and controlling access to digital systems and their application in the design of network security architecture <u>Core knowledge and skills</u> R3.9 Types and application of access control methods <u>Occupational specialism: Digital infrastructure pathway</u> PO1: Apply procedures and controls to maintain the digital security of an organisation and its data K1.25 Methods of managing and controlling access to digital systems and their application in the design of network security architecture <u>Skills development in Occupational specialism: Digital infrastructure pathway</u> S1.1 Apply and maintain procedures and security controls in the installation, configuration and support of physical and virtual infrastructure to ensure confidentiality, integrity and availability S1.3 Explain the importance of organisational and departmental policies and procedures in respect of adherence to security <u>Employer-set project (core component): Digital infrastructure</u>			
Timing	Learning activities	Resources/links	Formative assessment	Technical Qualification (TQ) specification coverage
5–10 minutes	Learning Objectives Discuss the learning objectives set. Prior learning check Learners to write their	Sticky notes for starter activity	Assessment of prior knowledge of APIs	

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	answers on sticky notes for each starter activity question below, based on last week's session. 1. Describe one advantage of using an application programme interface (API). 2. What does an API use to send and receive requests? 3. Identify three ways an API can be accessed.			
25 minutes	Tutor-led Introduction to access control methods, with a tutor-led discussion and presentation on the following types of control: • RBAC (role-based access control) • ABAC (attribute-based access control) • MAC (mandatory access control)	Information on PowerPoint Session 4.pptx, slides 4–8 Session 4 Activity 1 - Student version.docx Computers with internet access for research	Tutor questioning to check for understanding during delivery Self-assessment of responses to questions	<u>Core knowledge and skills</u> R3.9 Types and application of access control methods <u>Occupational specialism: Digital infrastructure pathway</u> PO1: Apply procedures and controls to maintain the digital security of an organisation and its data

	• DAC (discretionary access control). Learner activity 1 Access control activity: learners to be given a list of multiple answer questions. Learners will have to explain why they have chosen the answer rather than just answering either A, B, C or D. Class discussion to support. Skills development activity Configure and apply appropriate access control methods to physical or virtual networks.			• K1.25 Methods of managing and controlling access to digital systems and their application in the design of network security architecture <u>Skills development in Occupational specialism: Digital infrastructure pathway</u> S1.1 Apply and maintain procedures and security controls in the installation, configuration and support of physical and virtual infrastructure to ensure confidentiality, integrity and availability
25 minutes	Learner activity 2 Learners to work in groups to create a presentation on the following. Each topic must be covered, so group sizes will vary.	Flipcharts and marker pen for group discussion Computers with internet access for research	Tutor questioning to check for understanding during delivery Self-assessment of responses to questions	<u>Core knowledge and skills</u> R3.9 Types and application of access control methods

	The presentation will be delivered to the class. The topics are as follows. • Managing and controlling access to systems. • Physical and virtual methods of managing and securing network traffic. • Techniques applied to ensure cybersecurity for internet connected devices. • Importance of cybersecurity to organisations and society. • The fundamentals of network topologies. • The application of cybersecurity principles.	Microsoft Office applications, such as PowerPoint	Learners work in groups to share their responses	<u>Occupational specialism: Digital infrastructure pathway</u> PO1: Apply procedures and controls to maintain the digital security of an organisation and its data • K1.25 Methods of managing and controlling access to digital systems and their application in the design of network security architecture
25 minutes	Tutor-led Tutor-led discussion on common vulnerabilities.	Information on PowerPoint Session 4.pptx, slides 10–21	Tutor questioning to check for	<u>Core knowledge and skills</u>

	Learner activity 3 In small groups, learners to discuss each of the following and their impact, including any security control: • missing patches, firmware and security updates • password vulnerabilities • insecure BIOS/UEFI • misconfigurations • lack of protection software • disposal of data/devices • inadequate back-up process • DHCP spoofing • VLAN attacks • misconfigured firewalls or ACLs • exposed services or ports. Skills development activity	Flipcharts and marker pen for group discussion Computers with internet access for research Microsoft Office applications	understanding during delivery Self-assessment of responses to questions Learners work in groups to share their responses	R3.9 Types and application of access control methods <u>Occupational specialism: Digital infrastructure pathway</u> PO1: Apply procedures and controls to maintain the digital security of an organisation and its data • K1.25 Methods of managing and controlling access to digital systems and their application in the design of network security architecture <u>Skills development in Occupational specialism: Digital infrastructure pathway</u> • S1.3 Explain the importance of organisational and departmental
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	Explain the potential impact on security if policies and procedures are not adhered to – for example, danger to life or privacy. Employer-set project Project brief • A01: Plan their approach to meeting the project brief. • A02: Apply core knowledge and skills, as appropriate, to infrastructure support and maintenance. • A03: Select relevant techniques and resources to meet the brief.			policies and procedures in respect of adherence to security <u>Employer-set project (core component):</u> <u>Digital infrastructure</u> • A01, A02 and A03
5–10 minutes	Summary and knowledge check.	Application of key knowledge to applied situations	Self- and teacher assessment	

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