



Knowledge objective support for
Network Engineer (Level 4)



**Cover up to 80% of knowledge objectives
through PTT online training**

- **16 online courses cover the majority of objectives**
- **Aids learner understanding when blended with on-the-job tasks**
- **Flexible delivery to suit the learner and employer schedules**
- **Certificates of completion to prove knowledge for learner portfolio**
- **Proven, effective method of delivery**

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Network Engineer (Level 4) PTT course timeline example



PTT online courses are fully flexible in their delivery. Employers and apprentices can work with their apprenticeship provider to develop a schedule to suit them.

The topics covered by the PTT online courses could be reviewed periodically in virtual or classroom-based tutor support sessions to re-enforce learning through class-wide discussions.

Below is an example of how most of the knowledge objectives can be delivered in 6 months.

Month 1

TFA: Telephony and data services	K14
TCB: Wireless communications	K12

Month 2

TCC: Telecoms infrastructure and administration	K1, K11, K16
PAG: Telecoms networks	K11
TCD: Next generation access networks	K11

Month 3

EDC: Ethernet networks	K10, K11, K12, K19
EBD: Advanced Ethernet networks	K11, K19

Month 4

TQA: Introductions to wide area networks	K6, K11
TQF: Internet protocols	K3, K25, K28
TQG: IP networks	K9, K10

Month 5

TQH: Interior IP routing	K10
TQJ: Exterior IP routing	K10, K19
NSA: Network services	K1, K2, K3, K7, K14
NSB: Domain and cloud services	K2, K13

Month 6

TCG: Telecommunications systems security	K1, K16, K19
EDE: Network testing and fault-finding or	K1, K4, K5, K6, K15, K17
FPB: Telecoms testing and fault-finding	

Learners are given access to the above courses throughout their apprenticeships. This will allow them to revise the content when necessary to reinforce their knowledge gained on the job and prior to their end point assessment.

Network Engineer (Level 4)

Knowledge objectives

- K1 the causes and consequences of network and IT infrastructure failures
- K2 the architecture of typical IT systems, including hardware, OS, server, virtualisation, voice, cloud and applications
- K3 the techniques for systems performance and optimisation
- K4 diagnostic techniques and tools to interrogate and gather information regarding systems performance
- K5 organizational procedures to deal with recording information effectively and in line with protocols
- K6 Service Level Agreements (SLAs) and their application to delivering network engineering activities in line with contractual obligations and customer service
- K7 their role in Business Continuity and Disaster Recovery
- K8 the purposes and uses of ports and protocols
- K9 devices, applications, protocols and services at their appropriate OSI and, or, TCP or IP layers
- K10 the concepts and characteristics of routing and switching
- K11 the characteristics of network topologies, types and technologies
- K12 wireless technologies and configurations
- K13 cloud concepts and their purposes
- K14 functions of network services
- K15 the different types of network maintenance
- K16 how current legislation relates to or impacts occupation
- K17 troubleshooting methodologies for network and IT infrastructure
- K18 how to integrate a server into a network
- K19 the types of security threats to networks and IT infrastructure assets
- K20 how to use tools to automate network tasks
- K21 approaches to change management

PTT course title	Objectives covered
TFA: Telephony and data services	K14
TCB: Wireless communications	K12
TCC: Telecoms infrastructure and administration	K1, K11, K16
PAG: Telecoms networks	K11
TCD: Next generation access networks	K11
EDC: Ethernet networks	K10, K11, K12, K19
EBD: Advanced Ethernet networks	K11, K19
TQA: Introductions to wide area networks	K6, K11
TQF: Internet protocols	K8, K9
TQG: IP networks	K9, K10
TQH: Interior IP routing	K10
TQJ: Exterior IP routing	K10, K19
NSA: Network services	K1, K2, K3, K7, K14
NSB: Domain and cloud services	K2, K13
TCG: Telecommunications systems security	K1, K16, K19
EDE: Network testing and fault-finding or FPB: Telecoms testing and fault-finding	K1, K4, K5, K6, K15, K17