Unit 040 Principles of ICT system and data security

UAN:	**R/601/3509**
Level:	3
Credit value:	9
GLH:	75
Endorsement by a sector or regulatory body:	This unit is endorsed by e-skills UK
Aim:	This unit develops an understanding of the types of threat to ICT systems and data and methods of protecting against them. It also covers an understanding of the applications of cryptography to ICT systems and data.

Learning outcome
The learner will: 1. Understand the common types of threat to ICT systems and data
Assessment criteria
The learner can: 1.1 Describe common types of physical threats to ICT systems and data (hardware damage, loss and theft) 1.2 Describe common types of electronic threats to ICT systems and data (eg denial of service, data theft or damage, unauthorised use) 1.3 Explain the security vulnerabilities associated with remote access technologies (including wireless).

Learning outcome
The learner will: 2. Understand how to protect ICT systems
Assessment criteria
The learner can: 2.1 Describe methods of providing physical access control and security for ICT systems (locks, biometric controls, CCTV, shielding, fire detection and control) 2.2 Describe methods of providing electronic access control and security for ICT systems (firewalls, virtual networks, secure connection/transfer protocols, secure wireless connection) 2.3 Differentiate the following Access Control methods: • Mandatory • Discretionary • Role Based 2.4 Describe the operation of common types of malicious code: • Virus • Trojan • Logic Bomb • Worm • Spyware 2.5 Describe the characteristics of strong passwords and methods of attacking password-protected systems.

Learning outcome
The learner will: 3. Understand the applications of cryptography to ICT systems and data
Assessment criteria
The learner can: 3.1 Describe cryptographic algorithms: • Hashing • Symmetric • Asymmetric 3.2 Describe how cryptography can be applied to ICT system and data security in terms of: • Confidentiality • Integrity • Authentication • Non-repudiation • Access Control 3.3 Explain the operation of Public Key Infrastructure (PKI) 3.4 Explain the concepts of the Key Management and Certificate lifecycles.