# Quality Endorsed Unit

This unit does not form part of a regulated qualification.

**Unit Title:** An Introduction to PC Technology

**Unit Reference Number:** CJ7/3/WR/001

**Level:** 3

**Credit Value:** 8

**Minimum Guided Learning Hours:** 80

| Learning Outcome (The Learner will): | Assessment Criterion (The Learner can): |
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| 1. Understand the function of the major internal PC hardware components and peripheral devices. | 1.1 Describe all of the PC's major internal components, including:<br>a) System unit<br>b) Central processing unit<br>c) Motherboard<br>d) System memory<br>e) Hard disk drives<br>f) Power Supply<br>g) Cooling systems<br>h) Expansion Cards<br>i) Built-in ports |
| | 1.2 Describe the function of the following motherboard components and how they interact with each other:<br>a) Central Processing Unit<br>b) Chipset<br>c) Front-side bus<br>d) Back-side bus<br>e) Cache memory<br>f) System clock<br>g) Read-only memory<br>h) Random access memory<br>i) BIOS or UEFI firmware |
| | 1.3 Describe the function and the underlying technologies of the following peripheral devices: |

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| | | a) Keyboards<br>b) Pointing devices<br>c) Security devices<br>d) Display monitors<br>e) Touch screens<br>f) Printers<br>g) Multi-function devices |
| 2. | Understand how to install and configure the major PC hardware components. | 2.1 Recognise and describe the underlying display device technologies and hardware connectors, and how they are installed and configured in Windows |
| | | 2.2 Recognise and describe the various keyboard and mice technologies and how they are installed and configured in Windows |
| | | 2.3 Describe the various printer and scanner technologies and how they are installed and configured in Windows |
| | | 2.4 Recognise and describe the use of the various expansion card types, and be able to install and configure them |
| | | 2.5 Describe the different types of CPU and how to install and configure them, along with their cooling fans |
| | | 2.6 Install and connect a PC power supply |
| | | 2.7 Install and configure Random Access Memory |
| | | 2.8 Install, initialise, partition, and format a hard disk drive |
| 3. | Understand how to diagnose and resolve PC hardware problems, and design and implement a preventative maintenance schedule. | 3.1 Troubleshoot and resolve problems with internal PC components, including:<br>a) Central Processing Units<br>b) The BIOS or UEFI firmware<br>c) Cooling systems<br>d) Various motherboards<br>e) Power supplies<br>f) Boot failure |
| | | 3.2 Describe common disk drive errors and troubleshoot and resolve said problems |
| | | 3.3 Utilise specialist diagnostic software |
| | | 3.4 Implement a wide range of preventative maintenance procedures |

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| 4. Understand how to support a wide range of mobile devices, including laptop computers, tablet computers, and smartphones. | 4.1 Describe the underlying technology of the following laptop components:<br>a) Motherboard and its components<br>b) Various types of CPU<br>c) Random Access Memory<br>d) Disk drives<br>e) Keyboards<br>f) Touchpads<br>g) Optical disks<br>h) Display screens |
| | 4.2 Create and implement a laptop maintenance schedule, including battery care guidelines |
| | 4.3 Describe the major components and underlying technology of various types of tablet computers and smartphones |
| | 4.4 Troubleshoot common mobile device problems, including wireless issues |
| 5. Understand the major local and wide area network hardware components, network protocols, and maintenance procedures. | 5.1 Describe the functionality of the following network components:<br>a) Network interface cards<br>b) Network cables<br>c) Hubs<br>d) Switches<br>e) Routers<br>f) Bridges<br>g) Gateways<br>h) Repeaters |
| | 5.2 Describe the following network protocols:<br>a) TCP/IP<br>b) Data packet structure and delivery<br>c) IP addresses<br>d) Network Address Translation<br>e) Domain name servers<br>f) User Datagram Protocol<br>g) LDAP directory services<br>h) Simple Network Management Protocol |
| | 5.3 Describe the underlying technology of the Internet, including the various broadband access methods, and security threats |
| | 5.4 Use a wide range of networking diagnostic |

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| | | tools to troubleshoot errors and security threats |
| 6. Understand the Windows operating system structure and components and be able to install and configure Windows. | 6.1 | Create Windows installation media and perform and configure both a clean Windows installation and an upgrade from an earlier version |
| | 6.2 | Describe and configure the Windows Start Menu, Taskbar, and Desktop, including:<br>a) Frequently used apps<br>b) Managing app tiles<br>c) The Quick Access menu<br>d) Access to All Apps<br>e) Pinning to the taskbar<br>f) Adding toolbars<br>g) Taskbar icons<br>h) Keyboard shortcuts<br>i) Maintaining virtual desktops<br>j) Personalising the desktop |
| | 6.3 | Utilise the Clipboard, Recycle Bin, and File Explorer |
| | 6.4 | Describe and utilise the major Control Panel features, including:<br>a) Security & Maintenance<br>b) Speech Recognition<br>c) Default programs<br>d) Administrative Tools<br>e) Device Manager<br>f) Network & Sharing<br>g) Personalisation<br>h) Troubleshooting |
| | 6.5 | Describe and utilise the important Windows Accessories, including:<br>a) Notepad<br>b) WordPad<br>c) Paint<br>d) Fax & Scan<br>e) Windows Media Player |
| 7. Understand the importance of the Windows operating system maintenance procedures. | 7.1 | Configure and schedule the built-in Windows automatic maintenance procedures |
| | 7.2 | Implement Windows optimisation and performance-enhancing procedures |
| | 7.3 | Implement data backup and recovery procedures |

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| | 7.4 | Implement disk storage maintenance using the range of built-in Windows utilities |
| | 7.5 | Install Windows software updates |
| 8. Understand common security threats and take appropriate steps to combat them. | 8.1 | Describe the threats posed by various types of malware, including:<br>a) Viruses<br>b) Worms<br>c) Trojan horses<br>d) Logic bombs<br>e) Spyware<br>f) Phishing<br>g) Spoofing<br>h) Sniffing<br>i) Denial of service |
| | 8.2 | Describe and implement security “best practices” in a formal Security Policy |
| | 8.3 | Describe and install hardware and software firewalls, and intrusion detection systems |
| | 8.4 | Describe the security threats posed to mobile devices and take appropriate action to prevent them |
| | 8.5 | Describe and configure the Windows built-in security features including Windows Defender and Windows Firewall |
| | 8.6 | Counteract the security threats posed to wired and wireless networks |

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