Unit Syllabus

Level 1 Dismantle, assemble, install and maintain a Desktop computing system

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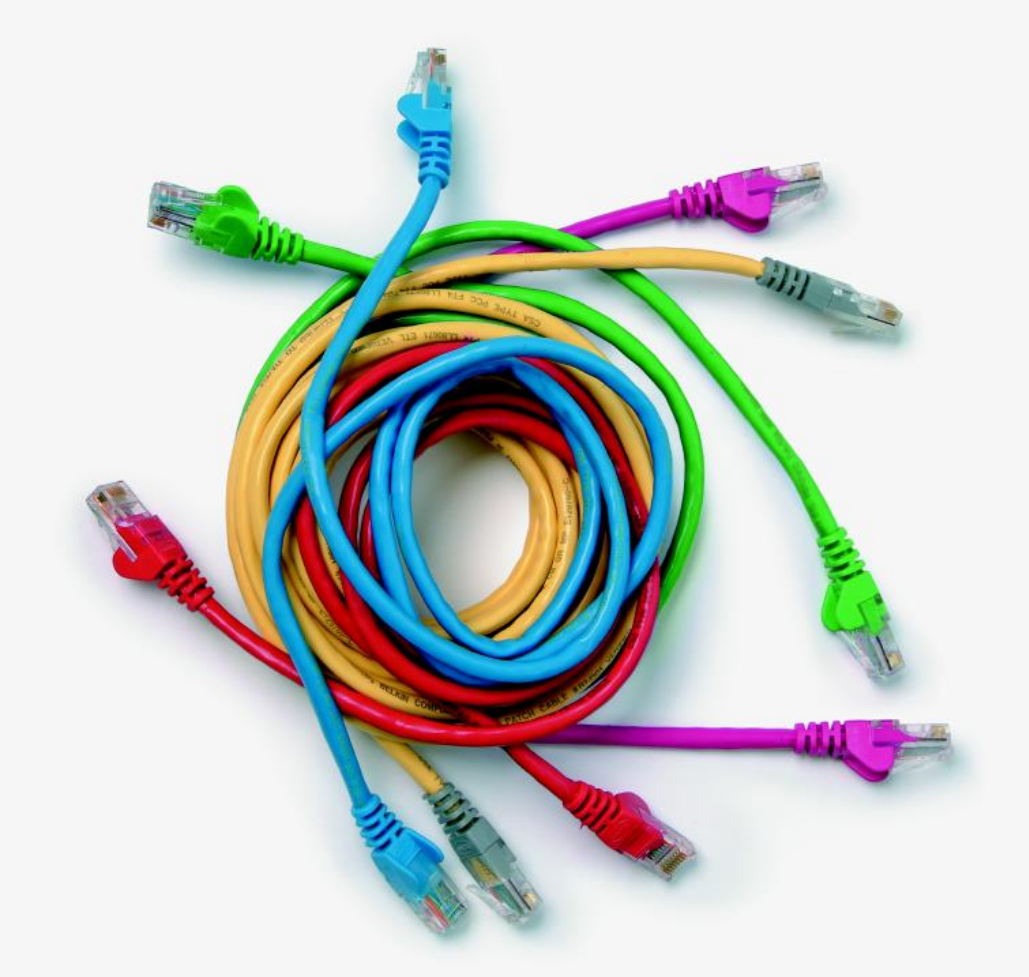

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Unit 106 Level 1 Dismantle, assemble, install and maintain a Desktop computing system

Rationale

This unit will enable candidates to identify parts and peripherals of a Personal Computer (PC), dismantle and assemble a PC, install software, and maintain a PC and its peripherals

Learning outcomes

There are **four** outcomes to this unit. The candidate will be able to:

- Identify parts and peripherals of a PC
- Dismantle and assemble a PC
- Install an operating system, drivers and applications on a PC
- Maintain a PC, peripherals and software

Guided learning hours

It is recommended that 40 hours should be allocated for this unit. This may be on a full time or part time basis.

Assessment and grading

Assessment will be by means of a **set assignment** covering both practical activities and underpinning knowledge.

Unit 106 Level 1 Dismantle, assemble, install and maintain a Desktop computing system

Outcome 1 Identify parts and peripherals of a PC

Practical activities

The candidate will be able to:

1 Prepare an inventory of equipment/peripherals either available or connected to the PC, eg

- a Base unit
- b Monitor
- c Printer
- d Scanner
- e Keyboard
- f Mouse
- g Speakers
- h Joystick, etc

2 Prepare a log of visible ports on the available hardware and map them to cables/plugs/devices they would connect to

3 Prepare an inventory of all visible internal parts of the PC, eg

- a Power supply unit (PSU)
- b Hard disk
- c Floppy disk drive
- d CD/DVD drive
- e Motherboard
- f CPU
- g Memory
- h Graphics card
- i Sound card
- j Modem/NIC, etc

Underpinning knowledge

The candidate will be able to:

1 State what a personal computer is

2 State the difference between hardware and software

3 List the differences between an operating system and application software

4 State the importance of creating system logs and taking an inventory

5 Identify the use of various peripherals in a PC system, eg

- a Monitor
- b Speakers
- c Keyboard
- d Mouse
- e Scanner
- f Printer
- g Webcam
- h Joystick, etc

6 Identify the use of different internal parts of a PC, eg

- a Motherboard, CPU, Memory
- b Power supply unit
- c CPU heat-sink/fan
- d Expansion cards eg Graphics/Sound/Modem/NIC, etc
- e Floppy disk drive, Hard drive
- f CD/DVD drive
- g Internal cables, etc

7 State what Electro Static Discharge (ESD) is

8 List different methods of protection from ESD

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Outcome 2 Dismantle and assemble a PC

Practical activities

The candidate will be able to:

1 Prepare a log of available hardware and draw basic diagrams of how ports, cables and plugs are connected together

2 Maintain necessary health & safety precautions, dismantle peripherals and components from the base unit

3 Assemble a PC from a range of available parts

4 Safely pack and store ICT equipment

5 Perform safety checks on an assembled system, eg

- a Loose connectors
- b Loose screws
- c Functionality of cooling fans
- d Seating of expansion cards, etc

6 Test PC for functionality and where possible rectify any problems

Underpinning knowledge

The candidate will be able to:

1 state common safety factors for dismantling and assembling a PC, eg
   - a electrical hazards
   - b ESD precautions
   - c sharp edges
   - d manual handling, etc

2 identify the use of the following parts of a PC whilst assembling the system
   - a serial/Parallel/USB/Firewire (IEEE 1394) port
   - b audio connections
   - c modem/NIC
   - d PS/2 type ports
   - e power connectors
   - f video Port
   - g LEDs and other indicators
   - h various switches

3 identify tools that can be used in dismantling a PC, eg
   - a antistatic wrist-strap
   - b screw drivers
   - c tweezers
   - d torch, etc

4 state common problems that can occur during installing of a PC, eg
   - a damaged parts
   - b wrong parts
   - c software problems
   - d unseated expansion cards
   - e loose connectors and jumpers, etc

5 list methods of manual handling and safe storage of components of a PC, eg
   - a hard disk
   - b expansion cards
   - c RAM, etc.

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Outcome 3 Install an operating system, drivers and applications on a PC

Practical activities

The candidate will be able to:

1 check compatibility of hardware and minimum system requirements for installation of an operating system (OS), eg
   - a CPU speed
   - b hard disk size
   - c memory capacity, etc

2 install an operating system eg Windows 98/XP

3 install/update drivers for various devices, eg
   - a video
   - b audio
   - c modem/NIC
   - d printer, etc

4 prepare/configure a system to suit different user requirements eg display, colours, mouse pointers, icons, etc

5 install various types of applications on a PC, eg
   - a anti-virus
   - b firewall
   - c anti-spyware
   - d word processor/spreadsheet eg Office
   - e multimedia applications
   - f photo editor, etc.

Underpinning knowledge

The candidate will be able to:

1 state the need for an operating system

2 state the purpose of testing hardware and fixing failures before installing an operating system (OS)

3 identify the use of various operating systems available, eg
   - a Windows 98
   - b Windows XP
   - c Linux
   - d MAC OS

4 state the need to check minimum system requirements for installing an OS

5 state the function of the BIOS when installing an OS

6 list various steps of installation of an OS

7 state what device drivers are

8 identify safe sources and procedures of obtaining device drivers

9 state the need and use of various applications eg
   - a Office software
   - b Internet browsers
   - c anti-virus software
   - d firewall
   - e anti-spyware software
   - f pop up blockers
   - g multimedia players
   - h photo editors, etc.

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Outcome 4 Maintain a PC, peripherals and software

Practical activities

The candidate will be able to:

1 Carry out maintenance (cleaning) on different types of hardware. Report/resolve problems encountered and create maintenance records for each item, eg

- a base unit
- b PSU/CPU fan
- c monitor
- d keyboard
- e mouse
- f printer
- g scanner, etc

2 carry out a range of software maintenance procedures. Report/resolve problems encountered and create maintenance records for each item, eg

- a clear unused files
- b disk Defragmenter
- c disk Scanner
- d anti-virus check/update
- e software patches/bug fixes
- f driver updates
- g disk/data back-up, etc.

Underpinning knowledge

The candidate will be able to:

1 state the importance of preventive maintenance for a PC and peripherals

2 list the Do's and Don'ts of computer maintenance

3 identify basic remedial actions to fix hardware & software problems

4 state preventive maintenance procedures for different types of hardware

5 list a range of preventive maintenance procedures for software

6 identify resources required to carry out computer maintenance, eg

- a cleaning foam
- b cotton buds
- c compressed air
- d screen clean
- e anti-virus software
- f drivers updates
- g software updates and bug fixes
- h third party utility programs
- i different tools, etc

7 state the need for keeping maintenance records.

Unit record sheet

Use this form to track your progress through this unit.

Tick the boxes when you have covered each outcome. When they are all ticked, you are ready to be assessed.

Outcome	✓	Date
1 Identify parts and peripherals of a PC	☐	
2 Dismantle and assemble a PC	☐	
3 Install an operating system, drivers and applications on a PC	☐	
4 Maintain a PC, peripherals and software	☐	

Candidate Signature ..... **Date** .....

City & Guilds Registration Number .....

Quality nominee (if sampled) ..... **Date** .....

Assessor Signature ..... **Date** .....

External Verifier Signature (if sampled) ..... **Date** .....

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