

Higher National Unit Specification

General information for centres

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Unit code: DM35 34

Unit purpose: This Unit is designed to introduce candidates to the issues involved in configuring, troubleshooting and maintaining a client operating system. It is intended for candidates undertaking an HN in Computing or a related area, who require a broad knowledge of client operating systems and desktop support. On completion of the Unit the candidate should be able to:

1. Perform an installation of a desktop operating system using different installation methods.
2. Configure, manage and troubleshoot access to resources, desktop and user environments.
3. Troubleshoot network protocols and services.

Credit points and level: 2 HN Credits at SCQF level 7: (16 SCQF credit points at SCQF level 7*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit will be at the discretion of the Centre. There are no specific requirements but candidates would benefit from knowledge of computer hardware and software. This may be demonstrated by the possession of units such as *DG0K 33 Hardware Concepts* and/or *DF9L 33 Operating System Concepts* or *DH33 34 Computer Operating Systems 1* and/or *DM2X 35 Computer Operating Systems 2* and *DM34 34 Supporting Users and Troubleshooting Desktop Applications*. Alternatively, candidates might provide evidence of informal prior learning or experience, or the achievement of commercially recognised qualifications.

Core skills: There may be opportunities to gather evidence towards core skills in this Unit, although there is no automatic certification of core skills or core skills components.

Context for delivery: If this Unit is delivered as part of a group award, it is recommended that it should be taught and assessed within the subject area of the group award to which it contributes. If this unit is to be used in a vendor based environment, it is also recommended it be delivered in tandem with the HN Unit DM34 34: Supporting Users and Troubleshooting Desktop Applications.

General information for centres (cont)

Assessment: Evidence for the knowledge and/or skills for the Unit must be produced using a set of objective response questions to assess candidates' knowledge and understanding. This must be administered as a single end-of-unit test.

Candidates must answer at least 60% of the questions correctly in order to obtain a pass.

Testing must take place in a closed-book environment where candidates have no access to books, handouts, notes or other learning material. Testing can be done in either a machine-based or paper-based format and must be invigilated by a tutor or mentor. There must be no communication between candidates and communication with the invigilator must be restricted to matters relating to the administration of the test.

If a candidate requires to be reassessed, a different selection of questions must be used. Candidates must answer at least 60% of the reassessment questions correctly in order to obtain a pass.

If an outcome has a practical component, this must be assessed by having the candidate use and complete a logbook to record the practical tasks successfully completed. The logbook can be produced by the candidate in paper or electronic form and **must** be authenticated by the tutor or mentor.

For some outcomes only a sample of the practical tasks needs to be completed and recorded for assessment purposes, e.g. three out of five. This is clearly indicated in the logbook instructions for the outcomes involved. Where this occurs, tutors must inform candidates of the tasks to be completed.

If a candidate requires to be reassessed, a different selection of practical components must be used. At least two of the practical components in the reassessment must be different from those used in the original logbook.

Higher National Unit specification: statement of standards

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Unit code: DM35 34

The sections of the Unit stating the Outcomes, knowledge and/or skills, and evidence requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Perform an installation of a desktop operating system using different installation methods

Knowledge and/or skills

- ◆ Perform and troubleshoot an attended installation of a desktop operating system
- ◆ Perform and troubleshoot an unattended installation of a desktop operating system
- ◆ Upgrade from a previous version of a desktop operating system
- ◆ Connect to local and network print devices
- ◆ Configure and troubleshoot hardware devices (CD-ROM's, removable storage devices etc), and drivers

Evidence requirements

Assessment Task 1 - Objective Response Test

The assessment of the knowledge/skills of Outcome 1 will be examined by 20 MCQ (multiple choice questions) and/or MRQ (multiple response questions), four being derived from **each** of the five sections listed above. The questions must cover **each** of the knowledge and skills points listed above. The assessment must be undertaken in conjunction with the objective assessments for Outcomes 2 and 3 at the end of the unit. The conditions of assessment are outlined in Outcome 3.

Assessment Task 2 - Practical Activity Logbook

The logbook must record successful completion of **at least three of the five** tasks listed below, including **at least two of the first three tasks**. The tasks to be completed must be selected by the tutor from the following –

1. Perform and troubleshoot an attended installation of a desktop operating system
 - 1.1 A record of the tasks carried out by the candidate in performing a manual installation. This should include applying service pack updates, and troubleshooting failed installations.
2. Perform and troubleshoot an unattended installation of a desktop operating system
 - 2.1 A record of the tasks carried out by the candidate in performing an automated installation, including any unattended installation files or scripts created by the candidate.

Higher National Unit specification: statement of standards (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

3. Upgrade from a previous version of desktop operating system
 - 3.1 A record of the tasks carried out by a candidate in upgrading from an older version including migration of user state data from an existing computer to a new computer and installing a second instance of an operating system on a computer.
4. Connect to local and network print devices
 - 4.1 A record of the tasks carried out by the candidate in configuring, and managing both local and network based printing devices. This should include troubleshooting end-user printing problems.
5. Configure and troubleshoot hardware devices and drivers
 - 5.1 A record of the tasks carried out by the candidate in configuring and troubleshooting all types of storage devices, including disk partitioning, and volumes.
 - 5.2 A record of the tasks carried out by the candidate in configuring and troubleshooting display devices and Advanced Configuration and Power Interface (ACPI) settings.
 - 5.3 A record of the tasks carried out by the candidate in configuring and troubleshooting I/O devices, drivers and hardware profiles

Practical activity logs should be based on a pro-forma given to candidates, but must as a minimum be properly titled with the candidate's name and date, and signed by the assessor confirming that each task is the candidate's own work.

For Outcome 1 a sample of the practical tasks needs to be completed and recorded for assessment purposes, ie three out of five. The assessor should clearly indicate in a candidate logbook the work to be undertaken by the candidate. If a candidate requires to be reassessed, a different selection of practical components must be used. At least two of the practical components in the reassessment must be different from those used in the original logbook

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

Outcome 2

Configure, manage and troubleshoot access to resources, desktop and user environments

Knowledge and/or skills

- ◆ Monitor, manage, and troubleshoot access to files and folders/directories
- ◆ Manage and troubleshoot access to shared folders/directories
- ◆ Manage and troubleshoot access to and synchronisation of offline files
- ◆ Configure the user environment
- ◆ Configure support for multiple languages or multiple locations
- ◆ Troubleshoot security settings and local security policy
- ◆ Configure and troubleshoot local user and group accounts
- ◆ Troubleshoot system start-up and user logon problems

Higher National Unit specification: statement of standards (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Evidence requirements

Assessment Task 1 - Objective Response Test

The assessment of the knowledge/skills of Outcome 2 will be examined by 24 MCQ (multiple choice questions) and/or MRQ (multiple response questions), three being derived from **each** of the eight sections listed above. The questions must cover **each** of the knowledge and skills points listed above. The assessment must be undertaken in conjunction with the objective assessments for Outcomes 2 and 3 at the end of this unit. The conditions of assessment are outlined in Outcome 3.

Assessment Task 2 – Practical Activity Logbook

The logbook for Outcome 2 must record successful completion of **at least five of the eight** tasks listed below, including **at least three of the last five tasks**. The tasks to be completed must be selected by the tutor.

1. Monitor, manage, and troubleshoot access to files and folders/directories
 - 1.1 A record of the tasks carried out by the candidate in monitoring, managing and troubleshooting access to files and folders, including file permissions, simple file sharing and file encryption.
2. Manage and troubleshoot access to shared folders/directories
 - 2.1 A record of the tasks carried by the candidate in configuring, monitoring, managing and troubleshooting access to shared folders, including partitions/volumes.
3. Manage and troubleshoot access to and synchronisation of offline files
 - 3.1 A record of the tasks carried out by the candidate in configuring and troubleshooting offline files and offline files synchronisation.
4. Configure the user environment
 - 4.1 A record of the tasks carried out by the candidate in configuring the desktop and user environment, including toolbar and/or task settings. It should include accessibility options, pointing devices ie mouse or similar and fast user switching.
5. Configure support for multiple languages or multiple locations
 - 5.1 A record of the tasks carried out by the candidate in configuring and troubleshooting regional and language settings.
6. Troubleshoot security settings and local security policy
 - 6.1 A record of the tasks carried out by the candidate in configuring, managing and troubleshooting security settings including using the Local Security Settings and any other domain policy security tools.
7. Configure and troubleshoot local user and group accounts
 - 7.1 A record of the tasks carried out by the candidate in configuring, troubleshooting and managing local user and group accounts, including rights and permissions.
8. Troubleshoot system start-up and user logon problems
 - 8.1 A record of the tasks carried out by the candidate in troubleshooting system start-up, user logon (local and domain) issues.

Higher National Unit specification: statement of standards (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Practical activity logs should be based on a pro-forma given to a candidate, but must as a minimum be properly titled with the candidate's name and date, and signed by the assessor confirming that each task is the candidate's own work.

For Outcome 2 a sample of the practical tasks needs to be completed and recorded for assessment purposes, ie five out of eight. The assessor should clearly indicate in a candidate logbook the work to be undertaken by the candidate. If a candidate requires to be reassessed, a different selection of practical components must be used. At least two of the practical components in the reassessment must be different from those used in the original logbook.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

Outcome 3

Troubleshoot network protocols and services

Knowledge and/or skills

- ◆ Monitor and analyse system performance using a range of performance tools
- ◆ Troubleshoot TCP/IP
- ◆ Troubleshoot name resolution issues
- ◆ Configure and troubleshoot remote connections
- ◆ Configure and troubleshoot an Internet browser
- ◆ Configure and troubleshoot end-user systems by using remote connectivity tools

Evidence requirements

Assessment Task 1 - Objective Response Test

The assessment of the knowledge/skills of Outcome 3 will be examined by 18 MCQ (multiple choice questions) and/or MRQ (multiple response questions), three being derived from **each** of the six sections listed above. The questions must cover **each** of the knowledge and skills points listed above.

The assessment must be undertaken in conjunction with the objective assessments for Outcomes 1 and 2 at the end of this unit. The assessment must be undertaken in supervised conditions and is closed book. A candidate must complete this assessment within two hours. Candidates may not bring to the assessment event any notes, textbooks, handouts or other material (calculators are allowed). The questions presented must significantly change on **each** assessment occasion. Testing can be done in either a machine-based or paper-based format and must be invigilated by a tutor or mentor. There must be no communication between candidates and communication with the invigilator must be restricted to matters relating to the administration of the test.

A candidate must answer at least 60% of the questions correctly in order to obtain a pass.

Higher National Unit specification: statement of standards (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

If a candidate requires to be reassessed, a significant proportion of different questions must be used from all sections. The questions used in the reassessment must be significantly different from those used in the original test. A candidate must answer at least 60% of the reassessment questions correctly in order to obtain a pass.

Assessment Task 2 – Practical Activity Logbook

The logbook for Outcome 3 must record successful completion of **at least four** of the **six** tasks listed below, including **at least three of the first four tasks**. The tasks to be completed must be selected by the tutor from the following:

- 1. Monitor and analyse system performance**
 - 1.1 A record of the tasks carried out by the candidate in using troubleshooting tools like Help and Support, Task and Performance tools

- 2. Troubleshoot TCP/IP**
 - 2.1 A record of the tasks carried out by the candidate in configuring and troubleshooting TCP/IP configuration (manual and automated). It should include the use of tools like Ping, nslookup and ARP.
 - 2.2 A record of the tasks carried out by the candidate in configuring and troubleshooting Internet Connection Firewall (ICF) settings.

- 3. Troubleshoot name resolution issues**
 - 3.1 A record of the tasks carried out by the candidate in configuring and troubleshooting, host name resolution including the use of Host files and DNS.
 - 3.2 A record of the tasks carried out by the candidate in configuring and troubleshooting NetBIOS name resolution.

- 4. Configure and troubleshoot remote connections**
 - 4.1 A record of the tasks carried out by the candidate in configuring and troubleshooting a remote dialup connection and a remote connection across the Internet, including client-side configuration.

- 5. Configure and troubleshoot Internet browser**
 - 5.1 A record of the tasks carried out by the candidate in configuring and troubleshooting Internet browser general, security and security connection properties.

- 6. Configure and troubleshoot end-user systems by using remote connectivity tools**
 - 6.1 A record of the tasks carried out by the candidate in using Remote utilities to configure/troubleshoot an end user's desktop and providing Remote Assistance to configure and troubleshoot an end user's desktop.

Higher National Unit specification: statement of standards (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Practical activity logs should be based on a pro-forma given to a candidate, but must as a minimum be properly titled with the candidate's name and date, and signed by the assessor confirming that each task is the candidate's own work.

For Outcome 3 a sample of the practical tasks needs to be completed and recorded for assessment purposes, ie four of the six. The assessor should clearly indicate in a candidate logbook the work to be undertaken by the candidate. If a candidate requires to be reassessed, a different selection of practical components must be used. At least two of the practical components in the reassessment must be different from those used in the original logbook.

Assessment guidelines

It is suggested that all the above concepts be presented and explained within the context of current real-world practice and applications.

Administrative Information

Unit code: DM35 34

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Superclass category: CA

Date of publication: August 2004

Version: 02

Version	Description of change	Date
02	Evidence requirements have been simplified and summarised within practical activities over Outcomes 1-3.	12/08/10

Source: SQA

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

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Higher National Unit specification: support notes

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours. The suggested time allocation for each outcome (including assessment) is as follows:

Outcome 1:	30 hours
Outcome 2:	30 hours
Outcome 3:	20 hours

Guidance on the content and context for this Unit

During the delivery of this unit it is important that every opportunity is taken to introduce real-world examples, opportunities for whole-class and group discussion and practical demonstrations wherever possible. Concepts and terminology should be presented in context throughout the Unit. Video presentations should be used where appropriate for providing an alternative explanation of a difficult topic, or as a focus for class discussion or group work.

It is intended that a significant amount of time will be made available as a central part of the course for revision, tutorials and formative assessment exercises. Candidates should be strongly encouraged to undertake further reading and opportunities for individual or group research should be provided.

The most important overall emphasis should be on the relevance and currency of content in such a rapidly evolving field. It is recommended that Centres deliver this Unit within the context of modern operating systems, eg installing components, customising settings and troubleshooting security and services associated with the system.

The outcomes cover elements of a GUI desktop operating system like Microsoft Windows XP or similar GUI interfaces.

This unit may assist in preparing for vendor certifications like Microsoft examination 70-271: Supporting Users and Troubleshooting a Microsoft Windows XP operating system. Please see the separate credit transfer document which gives details of vendor certifications that will be accepted as assessment evidence. Vendor certifications can change rapidly and candidates should be encouraged to check current details at the relevant vendor web site to ensure all the objectives have been met. The Microsoft examination can also contribute towards the Microsoft Certified Desktop Support Technician (MCDST).

The Outcomes in this unit have been written in a vendor-independent manner. However the following Support Notes assume that the unit will be delivered using a desktop operating system such as Windows XP. However no restriction is placed on the operating system to be used and centres are free to choose alternative GUI operating systems, although this may require some changes in terminology.

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Outcome 1

Perform an installation of a desktop operating system using different installation methods

This might involve installations using command line interfaces, scripted files, standard manufacturer guides and bespoke customised options.

Candidates should be to identify, configure and troubleshoot installation types and methods –as below:

Types	Methods
Clean	Attended
Upgrade	Unattended
Multi-boot	From a network share

They should be able to advise and perform for people the following regardless of any type of installation:

- ◆ Hard disks (formatting and partitioning) including, file system choices
- ◆ When to perform a clean install, an upgrade or from a network share
- ◆ Hardware compatibility, System and boot partitions, BIOS settings, configuring device drivers and hardware issues relating to an installation
- ◆ When to use the upgrade advisory tools, start-up disks, or enabling a Network PXE device.
- ◆ Configuring network components, using Product Activation tools
- ◆ Resolving set-up errors, viewing log files, using the recovery tools and consoles, to repair an installation
- ◆ The four installation phases:

Phase	Action
One	File copy
Two	Text mode set-up
Three	GUI mode set-up
Four	GUI Welcome screen

Knowledge and/or skills

1. Perform and troubleshoot an attended installation of a desktop operating system
 - ◆ A candidate should know how to use the types of set-up commands and the various switches and supply default settings
 - ◆ A candidate should be able to troubleshoot attended installation procedures by determining what has changed, eliminating possible causes, identifying, and test solutions making use of automated and manual system recovery tools to recover the registry and modifying boot options in the boot configuration file

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

2. Perform and troubleshoot an unattended installation of a desktop operating system
 - ◆ A candidate should be able to create automated answer files, know how to use setup commands with various switches and supply default settings
 - ◆ A candidate should be able to use imaging and remote methods of installation
 - ◆ A candidate should be able to determine what has changed, eliminate possible causes, identify, and test solutions making use of automated system recovery tools to recover the registry and modifying boot options in the boot configuration file
3. Upgrade from a previous version of a desktop operating system by running the upgrade advisor
 - ◆ A candidate should be able to use migration tools in a domain or workgroup to transfer user data safely and how to uninstall an upgrade

The content of these areas can be found in vendor curricula like the Microsoft course: 2261 Supporting Users running the Microsoft Windows XP operating system. Alternative vendor curricula can also be used.

4. Connect to local and network print devices
 - ◆ Install, configure, troubleshoot and update local and network print devices, including the correct terminology used in a Microsoft operating system. How to correctly assign print permissions and troubleshoot access to printing for users, including redirect print jobs, and resetting the print spooler.
5. Configure and troubleshooting hardware devices (CD-ROMS, removable storage devices etc) and drivers
 - ◆ A candidate should know how to install, update and troubleshoot device drivers. They should also know the differences between signed and unsigned drivers and be able to “rollback” installed device drivers.
 - ◆ A candidate should know common storage devices (hard disks, CD-ROM, DVD, Flash memory and tape drives)? A candidate should know the different types of disk configurations how they can be converted and understand fault tolerance options available for recovery of disks. A candidate should be able to partition disks, and use computer and disk management utilities
 - ◆ A candidate should know how to install, configure, troubleshoot and update display devices and drives including identifying the different types of display devices available and their settings also how DirectX relates to display issues.
 - ◆ A candidate should know how to install, configure, troubleshoot and update I/O devices. Identify different I/O devices, and understand hardware profiles.
 - ◆ A candidate should know how to use, configure and troubleshoot Advanced Configuration Power Interface (ACPI) including power schemes, standby and hibernation modes.

The content of these areas can be found in vendor curricula like the Microsoft course: 2261 Supporting Users running the Microsoft Windows XP Operating System. Alternative vendor curricula can also be used.

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

Outcome 2

Configure, manage and troubleshoot access to resources, desktop and user environments

Resources may include files/folders/directories, user permissions and accounts, language and accessibility options and user desktop and environmental settings.

Knowledge and/or skills

1. Monitor, manage, and troubleshoot access to files and folders/directories
 - ◆ A candidate must know how to manage files and folders and troubleshoot access to files and folders (shared and offline). How/ when to use file compression, encrypting file system and the different types of files and folders you have/can create.
2. Manage and troubleshoot access to shared folders/directories
 - ◆ A candidate must know how to set and manage file and folder permissions and audit access to files and folders. How to map network drives, and what is shadow copy technology and file caching.
3. Manage and troubleshoot access to and synchronization of offline files
 - ◆ A candidate must know how to use, configure and manage offline files including synchronisation.
4. Configure the user environment
 - ◆ A candidate must know how to configure and manage user profiles (local, roaming, mandatory etc.), start-up menus and task bar options, desktop and folder views, user configuration and accessibility options.
5. Configure support for multiple languages or multiple locations
 - ◆ A candidate must demonstrate how to configure and manage language options (local, standard and multilingual), regional and language options (for different operating systems), including user interface language and multilingual issues.
6. Troubleshoot security settings and local security policy
 - ◆ A candidate must demonstrate how to configure, manage and troubleshoot security (workgroup and domain); understand local policy settings and use security configuration and analysis tools including auditing tools for the provision of user access.
7. Configure and troubleshoot local user and group accounts
 - ◆ A candidate must be able to identify the different types of user accounts (system, administrative, local and domain), user profiles, and user rights (administrative, limited, guest etc) that can be configured, applied and managed in a local or domain environment including password management and fast user switching.

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

8. Troubleshoot system start-up and user logon problems
 - ◆ A candidate must be able to configure, manage and troubleshoot logon problems associated with corrupt profiles, cached credentials, missing domain controller or incorrect connection to domain and bad password issues.

The content of these areas can be found in vendor curricula like the Microsoft course: 2261 Supporting Users running the Microsoft Windows XP Operating System, in modules 3 and 4. Alternative vendor curricula can also be used.

Outcome 3

Troubleshoot network protocols and services

Performance tools might include those related to memory, disk management, and application utilisation. Troubleshooting the TCP/IP, protocol suite should include references to the OSI model, TCP/IP tools and utilities and how they are used for network connectivity. Name resolution should include host and IP name resolution, tools and utilities like TraceCert and Ping. Internet browser tools include configuration of proxies, firewalls, certificates and security settings. Remote connectivity tools should include VPN, ICS etc

Knowledge and/or skills

1. Monitor and analyse system performance
 - ◆ A candidate should be able to use performance monitoring tools and system restore, utilities to monitor system performance and configure baseline figures for comparison.
2. Troubleshoot TCP/IP
 - ◆ A candidate should have an understanding of the OSI reference model and be able to use it to troubleshoot networking issues. The candidate should be able to explain how it relates to computer addressing including assigning, configuring, identifying and renewing TCP/IP configuration (manual and automatic).
3. Troubleshoot name resolution issues
 - ◆ A candidate should understand name resolution (Host and NetBIOS) and be able to manage and troubleshoot name resolution problems using tools like IPconfig, Ping, DNS, etc.
4. Configure and troubleshoot remote connections
 - ◆ A candidate should be able to identify the different types of remote connections, configure and troubleshoot remote connections (VPN, ICS etc) using a variety of connection tools.
5. Configure and troubleshoot Internet browser
 - ◆ A candidate should demonstrate their skills in configuring security, network and user settings in an Internet browser.

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

6. Configure and troubleshoot end-user systems by using remote connectivity tools
 - ◆ A candidate should be able to use remote desktop utilities to configure an end-user's desktop remotely.

The content of these areas can be found in vendor curricula like the Microsoft course: 2261 Supporting Users running the Microsoft Windows XP Operating System. Alternative vendor curricula can also be used.

Guidance on the delivery and assessment of this Unit

Opportunities for developing Core Skills

This unit is likely to form part of a group award which is primarily designed to provide candidates with the technical or professional knowledge and skills related to a specific occupational area. It is moderately technical in content and should not be adopted by group awards in other areas or delivered as a stand-alone Unit without careful consideration of its appropriateness.

It is a Unit which candidates are likely to find accessible at an introductory level, however, it is suggested that it be delivered only as part of an HN programme in Computing or a related area. It should be delivered in tandem with other Computing Units and opportunities for teaching and assessment integration explored.

To minimise assessment overhead, one or more sets of closed-book restricted-response questions, should be used to provide evidence of candidates' knowledge for all Outcomes. It is suggested that multiple choice questions should be used as the preferred assessment method – as well as reducing the time required for assessment and marking, these reduce the need for candidates to memorise details and encourage understanding. Candidates must meet the necessary threshold to each set of questions to gain a pass. Candidates must also complete a logbook recording the practical work undertaken for each outcome.

If a candidate requires to be reassessed, a significant number of different questions must be used from all sections. The questions used in the reassessment must be significantly different from those used in the original test.

If an outcome has a practical component, this should be assessed by having the candidate use a logbook to record the practical tasks successfully completed. The logbook can be in paper or electronic form and should be authenticated by the tutor or mentor.

For some outcomes only a sample of the practical tasks needs to be completed and recorded for assessment purposes, ie three out of five. This is clearly indicated in the logbook instructions for the outcomes involved. Where this occurs, tutors should inform candidates of the tasks to be completed.

Higher National Unit specification: support notes (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

If a candidate requires to be reassessed, a different selection of practical components should be used. At least two of the practical components in the reassessment should be different from those used in the original logbook.

The outcomes cover elements of a GUI desktop operating system like Microsoft Windows XP, or similar GUI interfaces.

This unit may assist in preparing for vendor certifications like Microsoft examination 70-271: Supporting Users and Troubleshooting a Microsoft Windows XP operating system. Please see the separate credit transfer document which gives details of vendor certifications that will be accepted as assessment evidence. Vendor certifications can change rapidly and candidates should be encouraged to check current details at the relevant vendor web site to ensure all the objectives have been met. The Microsoft examination can also contribute towards the Microsoft Certified Desktop Support Technician (MCDST).

The content of this unit may be delivered using vendor-supplied curricula and delivery materials. As these materials are under continuous development, centres should check the appropriate vendor web site to ensure that such materials meet all the requirements of for this unit.

Open learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.

A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes.

For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 – publication code A1030)

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on the SQA website www.sqa.org.uk.

General information for candidates

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

This is a Unit is intended for candidates undertaking a Computing or IT-related qualification who require a broad knowledge of client operating systems and desktop support. It is designed to develop an understanding of the issues involved in configuring, troubleshooting and maintaining a client operating system, installing and administering a client operating system. On completion of the Unit you should be able to:

1. Perform an installation of a desktop operating system using different installation methods
2. Configure, manage and troubleshoot access to resources, desktop and user environments
3. Troubleshoot network protocols and services

In the first section of the course you will apply problem solving techniques to troubleshoot both automated and manual installations of operating systems. This will include answering end-user questions related to upgrading from a previous version of an operating system. You will be able to identify and troubleshoot problems with local and networked print devices, and use a variety of problem solving techniques to troubleshoot various hardware devices like storage media, display devices, advanced configuration and power management, and input and output devices.

In the second section of the course you will apply problem-solving techniques to troubleshoot access to files and folders, including individual file permissions and shared folder permissions. You will manage and troubleshoot access to offline files and the user environment, including toolbar, taskbar settings, accessibility options and fast-user switching. You will configure support for multiple languages or multiple locations, including regional and language settings. You will apply problem-solving techniques to troubleshoot security settings, local security policies and local user and group accounts. You will apply problem-solving techniques to troubleshoot start-up and user logon issues.

In the third section of the course you will apply problem-solving techniques to monitor and analyse system performance, troubleshoot TCP/IP connection problems and name resolution issues. You will also apply problem-solving techniques to configure and troubleshoot an Internet browser and remote connectivity tools, like remote desktop and remote assistance. There will be a closed book multiple choice assessment covering all outcomes. You will be expected to answer at least 60% of the questions correctly. You will also be expected to keep a logbook recording the practical tasks you have carried out during the Unit. You must satisfy the requirements for these assessments in order to achieve the Unit.

If an outcome has a practical component, then you should use a logbook to record the practical tasks successfully completed. The logbook can be in paper or electronic form and should be authenticated by the tutor or mentor.

Only a sample of the practical tasks might need completed and recorded for assessment purposes, e.g. three out of five. Tutors will inform candidates of the tasks to be completed.

General information for candidates (cont)

Unit title: Supporting Users and Troubleshooting a Desktop Operating System

This unit may assist in preparing for vendor certifications like Microsoft examination 70-271: Supporting Users and Troubleshooting a Microsoft Windows XP operating system. Please see the separate credit transfer document which gives details of vendor certifications that will be accepted as assessment evidence. Vendor certifications can change rapidly and candidates should be encouraged to check current details at the relevant vendor web site to ensure all the objectives have been met. The Microsoft examination can also contribute towards the Microsoft Certified Desktop Support Technician (MCDST).

The content of this unit may be delivered using vendor-supplied curricula. As these materials are under continuous development, centres should check the appropriate vendor web site to ensure that such materials meet all the requirements of for this unit.