SVQ for IT Users (ITQ) — level 2 (SCQF level 5)

F99N 04: Optimise IT System Performance 2

4 SCQF credit points at SCQF level 5

Description: This is the ability to keep a personal computer system up to date, fully functional and operating efficiently; and to solve problems and errors involving the interaction between hardware and software components.

Outcome **On completion of this Unit the candidate should be able to:**	Skills and Techniques	Knowledge and Understanding
1 Keep computer hardware and software operating efficiently.	1 Take appropriate steps to protect computer hardware from loss or damage. 2 Configure anti-virus and other **security software**. 3 Install and configure printers and other peripheral devices. 4 Configure **network settings** for mobile and remote computing. 5 Configure a computer to present or display information to an audience.	1 Describe the main features and functions of the **computer operating system**.
2 Manage files and disks to optimise performance.	1 Use file navigation software to organise files into an appropriate folder structure. 2 Backup and restore files and folders. 3 Manage **file and disk housekeeping** so that information is secure and easy to find. 4 Share files and folders with other users.	1 Describe why it is important to undertake file housekeeping of the **information stored** on computer systems and how it affects performance. 2 Distinguish between data and system file types.
3 Troubleshoot and respond to common IT system problems and errors.	1 Describe and **record IT system problems** to enable effective support. 2 Troubleshoot and respond to IT system problems appropriately. 3 Check that errors and problems have been resolved satisfactorily.	1 Describe common **IT system problems** and what causes them. 2 Describe when to try to solve a problem independently, and when to get **expert advice**.

Outcome **On completion of this Unit the candidate should be able to:**	Skills and Techniques	Knowledge and Understanding
4 Customise the working environment to optimise performance.	1 Select and adjust **system settings** to optimise performance as appropriate. 2 Configure the automatic start of programmes and other graphical display options.	1 Describe methods that can be used to **optimise system performance**.
5 Maintain software to meet performance needs.	1 Use appropriate techniques **to maintain software**. 2 Locate and install driver files for different devices.	2 Describe when and how to **upgrade software**.

Note: The **emboldened** items are exemplified in the Support Notes.

Evidence Requirements

Completion of a portfolio (manual, electronic or combination) to cover all of the Skills and Techniques and Knowledge and Understanding points stated above. The evidence generated should adhere to the Assessment Strategy for this award and encompass a range of evidence types.

General information

This Unit equates to NOS (National Occupational Standards for IT Users 2009) code OSP: Optimise IT System Performance level 2. It has a stated number of SCQF credit points = 4 at SCQF level 5.

Support Notes

Summary

A SCQF level 5 (ITQ level 2) user can carry out appropriate procedures to optimise system performance and can solve problems and errors on most types of hardware and software using skills and experience.

Examples of context:

- using ‘defrag’ to improve disk performance
- errors might include: software that needs more memory to open or recovery from damage from viruses

Examples of content are given separately for highlighted text, where explanatory notes are required on terminology in the Outcomes, and do not form part of the standards. Such examples are not meant to form a prescriptive list for the purposes of assessment but rather to amplify and interpret the generic terms used in the Performance Criteria in the light of current usage of ICT systems and software. These examples are subject to change as new tools and techniques become commonplace and older ones drift out of use.

The examples given below are indicative of the learning content and are not intended to form a prescriptive list for the purpose of assessment.

Outcome 1

Computer system: Make, model, serial number; operating system version; memory capacity; disk capacity.

Security software: Anti-virus, malware. Frequency; timing*; updates, firewall settings.*

Network settings: Remote access, connections and shared network folders, configure remote access settings, power management.

Outcome 2

Information storage: Data files, folders, sub-folders, storage media; *archives*.

File housekeeping: Naming and labeling conventions; organising files, folders and storage media; saving back-ups; deleting unwanted files; *changing default settings for saving data; properties; disk partitions.*

Outcome 3

IT system problems: Program not responding, paper jam, storage full, error dialogue, *virus threat, memory low, connection loss.*

Record IT system problems: Error log, description, frequency of occurrence, severity.

Expert advice: Limits of own understanding and skills, help menus, manufacturer's guidelines, how to follow advice, information needed by experts, *where to get advice to deal with different hardware and software problems.*

Outcome 4

System settings: Desktop, input and output settings; *display settings, multiple monitors.*

Optimise performance: Memory management; power management; disk partition.

Outcome 5

Upgrade software: Benefits of upgrading; drawbacks of not upgrading; the need to check compatibility of software and hardware upgrades with other parts of the system.

Maintain software: Install software patches and upgrades.

Guidance on examples of evidence

Typical examples of evidence for Outcome 1

Assessor checklist to demonstrate candidate competence in maintaining efficient operation of computer hardware and software. Written answers to extended response questions relating to the functions of computer operating systems.

Typical examples of evidence for Outcome 2

Assessor checklist to demonstrate candidate competence in managing files and disks to optimise performance. Written answers to extended response questions relating to file housekeeping of information stored on a computer system and how this effects performance, and to distinguish between data and system file types.

Typical examples of evidence for Outcome 3

Assessor checklist to demonstrate candidate competence in troubleshooting and responding to common IT system problems and errors. Written answers to extended response questions relating to the causes of common IT system problems and when to try to solve a problem independently and when to seek expert advice.

Typical examples of evidence for Outcome 4

Assessor checklist to demonstrate candidate competence in customising the working environment to optimise performance. Written answers to extended response questions relating to methods that can be used to optimise system performance.

Typical examples of evidence for Outcome 5

Assessor checklist to demonstrate candidate competence in the maintenance of software to satisfy performance requirements. Written answers to extended response questions relating to the upgrading of software.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**