OCR
Oxford Cambridge and RSA

Unit Title:	**Optimise IT system performance**
OCR unit number:	52
Level:	3
Credit value:	5
Guided learning hours:	40
Unit reference number:	K/502/4246

Unit purpose and aim

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.

This unit is about the skills and knowledge to review and modify system settings to improve economy, efficiency and performance; and upgrade systems to improve capacity or functionality.

Learning Outcomes	Assessment Criteria	Examples
The learner will: 1 Keep computer hardware and software operating efficiently	The learner can: 1.1 Explain the factors that should be taken into account when choosing an operating system 1.2 Take appropriate steps to protect computer hardware from loss or damage 1.3 Explain why routine fault-finding procedures are important 1.4 Use an appropriate fault-finding procedure to routinely monitor hardware performance 1.5 Configure anti-virus and other security software 1.6 Install and configure printers and other peripheral devices 1.7 Configure synchronisation and maintain security on remote access sessions 1.8 Configure a computer to present or display information to an audience	**Fault finding procedures:** Recommended by the manufacturer, *diagnostic tools and probes*; maintain fault log **Security software**: Anti-virus, malware. Frequency; timing; updates, firewall settings **Characteristics of operating systems:** Cost, ease of use, compatibility with software, proprietary or open source; availability of support; additional features
2 Manage files to maintain	2.1 Explain why it is important to undertake file	**Information storage:** Data files, folders, sub-folders, storage

Learning Outcomes	Assessment Criteria	Examples
and improve performance	housekeeping of the information stored on computer systems and how it affects performance 2.2 Use file navigation software to organise files into an appropriate folder structure 2.3 Archive, backup and restore files and folders 2.4 Manage file and disk housekeeping so that information is secure and easy to find 2.5 Configure access to remote file systems 2.6 Distinguish between data and system file types	media; archives File housekeeping: Naming and labelling conventions; organising files, folders and storage media; saving back-ups; deleting unwanted files; changing default settings for saving data; file and folder options; sharing and synchronising files; disk management
3 Troubleshoot and respond to IT system problems quickly and effectively	3.1 Assess IT system problems, explain what causes them and how to respond to them and avoid similar problems in the future 3.2 Carry out contingency planning to recover from system failure and data loss 3.3 Monitor and record IT system problems to enable effective response 3.4 Monitor system settings and adjust when necessary 3.5 Explain when and where to get expert advice 3.6 Help others to select and use appropriate resources to respond to IT system problems 3.7 Check that errors and problems have been resolved satisfactorily	IT system problems: Program not responding, paper jam, storage full, error dialogue, virus threat, compatibility problems, memory low; system slow; connection loss; intermittent errors; technically complex or serious errors; unrecoverable system failure Record problems: Error log, description, frequency of occurrence, severity; impact 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
4 Plan and monitor the routine and non-routine maintenance of hardware and software	4.1 Clarify the resources that will be needed to carry out maintenance 4.2 Develop a plan for the maintenance of IT hardware and software 4.3 Monitor the	Maintenance plans: Finance, expertise, materials, equipment

Learning Outcomes	Assessment Criteria	Examples
	implementation of maintenance plans, updating them where necessary	
5 Review and modify hardware and software to maintain performance	5.1 Use appropriate techniques to maintain software for optimum performance 5.2 Clarify when and how to upgrade software 5.3 Review and modify hardware settings to maintain performance	Maintain software: Install software patches and upgrades, install and uninstall software, install operating system upgrades; install maintenance updates; administrative tools and procedures 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, the importance of keeping up-to-date, return on investment

Assessment

All ITQ units may be assessed using any method, or combination of methods, which clearly demonstrates that the learning outcomes and assessment criteria have been met. Assessments must also take into account the additional information provided in the unit Purpose and Aims relating to the level of demand of:

- the activity, task, problem or question and the context in which it is set;

- the information input and output type and structure involved; and

- the IT tools, techniques or functions to be used.

See the Assessment and postal moderation section of the ITQ Centre Handbook.

Evidence requirements

Candidates must complete the Evidence Checklist for this unit without gaps. Individual unit checklists are available to download from the qualification webpage (see forms).

Guidance on assessment and evidence requirements

Please refer to the ITQ centre handbook on our webpage.

Details of relationship between the unit and national occupational standards

This unit maps fully to competences outlined in IT User National Occupational Standards version 3 (2009).