UNDERSTAND OPERATING SYSTEMS

UNIT CODE: CT/OS/CS/CR/02/6/B

UNIT DESCRIPTION

This unit covers the competencies required to understand operating systems. It involves understanding fundamentals of operating systems, applying computer application software to solving tasks, understanding process management, understanding memory management, understanding input-output management and understanding file management.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	**PERFORMANCE CRITERIA** ***(Bold and italicised terms are elaborated in the Range)***
1. Understand fundamentals of operating systems	1.1 ***Computer softwares*** is identified according to manufacturer's specification 1.2 Operating system is explained 1.3 ***Structures of operating systems*** are described. 1.4 ***Types of operating systems*** are explained. 1.5 Installation requirements for Windows are outline 1.6 Installation of Windows is demonstrated
2. Apply computer application softwares to solving tasks	1.1 ***Word documents are prepared*** as per job requirements 1.2 ***Presentation slides are prepared*** in accordance to workplace procedures 1.3 ***Worksheets and workbooks are prepared*** as per job requirements 1.4 ***Database is designed , created and manipulated*** in accordance with workplace procedures 1.5 Office internet functions are defined and executed in accordance with office procedure 1.6 Electronic mail addresses are opened and applied in workplace communication in accordance with office policy
3. Understand process management	1.1 Process management is explained 1.2 Manage ***computer resources*** 1.3 Process states and transitions are explained 1.4 Process scheduling is explained 1.5 Use of the Task Manager is demonstrated 1.6 Use of performance monitor tool is demonstrated
4. Understand memory management	1.1 Memory management is explained. 1.2 ***Memory management techniques*** are explained.

ELEMENT	PERFORMANCE CRITERIA *(Bold and italicised terms are elaborated in the Range)*
	1.3 Virtual memory management settings are demonstrated
5. Understand input and output management	4.1 Input - output management is explained 4.2 Disk operations are explained 4.3 Computer clock system is explained 4.4 Virtual Input Output is explained 4.5 Disk selection criteria are outlined 4.6 Verification of disk properties is demonstrated 4.7 ***Disk storage management operations*** are demonstrated 4.8 ***Device management operations*** are demonstrated
6. Understand file management and local policy settings	6.1 File management is explained. 6.2 ***File access methods*** are explained. 6.3 File allocation techniques are explained. 6.4 File protection and security are explained. 6.5 ***File and directory operations*** are demonstrated 6.6 ***Local policy settings*** are demonstrated

RANGE

This section provides work conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
Computer softwares may include but not limited to:	• System software • Application software • Utility software
Structures of operating system may include but is not limited to:	• Monolithic • Layered • Virtual • Client server model
Types of operating system may include but is not limited to:	• Real time • Normal • Batch • Time sharing
Word documents preparation may include but not limited to:	• Creation • Editing • Formatting • Mail merging • Printing
Slides preparation may include but not limited to:	• Creation • Editing • Formatting • Printing
Worksheets and workbooks preparation may include but not limited to:	• Creation • Data entry • Basic formulae and functions • Formatting • Data sorting and filtering • Printing
Database design creation and manipulation may include but not limited to:	• Table design • Form design • Report design • Data sorting • Indexing • Storage • Retrieval/querying • Security • Printing

Computer Resources may include but is not limited to:	• Processor • Storage space
Computer Resources may include but is not limited to:	• Processor • Storage space
Memory management techniques may include but is not limited to:	• Partitions • Virtual
Disk storage management operations may include but is not limited to:	• Shrinking volume • Extending volume • Formatting volume • Partitioning volume • Disk Optimization and defragmentation
Device Management Operations may include but is not limited to:	• Driver Installation • Resolving driver conflicts
File access methods may include but is not limited to:	• Sequential • Random • Indexed sequential
File and directory operations may include but is not limited to:	• Setting attributes • Share settings • Security settings • Customization of files and folders
Local policy settings may include but is not limited to:	• Password policy • Account lockout policy • Audit policy • Security options

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required skills

The individual needs to demonstrate the following skills:

- Communications (verbal and written);
- Time management;
- Problem solving;
- Planning;
- Decision Making;

- Research;

Required knowledge

The individual needs to demonstrate knowledge of:

- Classification of computer software
- Word processing;
- Spread sheets;
- Database;
- Presentation Packages;
- Office internet
- Concepts of operating systems
- Process management
- Memory management
- Input/output management
- File management and local security policy settings

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1. Critical Aspects of Competency	**Assessment requires evidence that the candidate:** 1.1 Identified types of operating systems 1.2 Explained structures of operating systems 1.3 Explained functions of operating systems 1.4 Installed Windows operating system 1.5 Explained process scheduling 1.6 Demonstrated process management using the task manager 1.7 Demonstrated resource allocation using performance monitor tool 1.8 Explained memory management techniques 1.9 Demonstrated disk storage management operations 1.10 Demonstrated device management using the Device Manager 1.11 Demonstrated file and directory operations 1.12 Configured local policy security settings
2. Resource Implications	The following resources should be provided: 2.1 Access to relevant workplace where assessment can take place

	2.2 Appropriately simulated environment where assessment can take place
3. Methods of Assessment	**Competency may be assessed through:** 3.1 Oral test 3.2 Observation 3.3 Practical demonstration 3.4 Written tests
4. Context of Assessment	Competency may be assessed 4.1 Off the job 4.2 on the job 4.3 During industrial attachment
5. Guidance information for assessment	5.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.