

MANAGE OPERATING SYSTEM

UNIT CODE: ICT/OS/IT/CR/05/5/B

UNIT DESCRIPTION

This unit covers the competencies required to select, install and usage of manage operating system

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range.</i>
1. Identify fundamentals of Operating system	1.1 Definition of Operating system is done 1.2 <i>Concepts of operating system</i> are identified. 1.3 <i>Structures of operating system</i> are described. 1.4 <i>Types of operating system</i> are identified. 1.5 Functions of operating system are identified.
2. Identify process management concepts	2.1 Concepts of processing are identified and explained 2.2 Process states are described 2.3 Definition of <i>Concurrency control</i> and types is done. 2.4 Explanation of Process scheduling and types of schedulers is done. 2.5 Definition of Deadlocks.
3. Identify concepts of memory management	3.1 Definition of memory management is done. 3.2 Objectives of memory management are identified. 3.3 <i>Memory management techniques</i> are identified. 3.4 <i>Memory management policies</i> are identified.
4. Identify concepts of Input and Output devices management.	4.1 Definition of input and output devices is done. 4.2 Objectives of input/output device management are identified. 4.3 Concepts of input and output devices are identified. 4.4 Input/output devices software are explained. 4.5 Description of disk and disk operations are done. 4.6 Explanation of computer clock system is done. 4.7 Computer terminals are identified. 4.8 Virtual devices are defined.

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5. Identify concepts of file management	5.1 Definition of file system management is done. 5.2 File system concepts are identified. 5.3 Objectives of file management are identified. 5.4 File access methods are identified. 5.5 Description of directory implementation is done 5.6 File allocation techniques are identified. 5.7 File protection and security are identified.
6. Identify Emerging trends in Operating system	6.1 Explanation of emerging trends is done. 6.2 Challenges of emerging trends are identified. 6.3 Ways of coping with emerging trends are identified.

RANGE

Variable	Range <i>May include but is not limited to:</i>
1. Concepts of operating system	<ul style="list-style-type: none"> • Characteristics • Objectives • Kernel • System code • shell
2. Structures of operating system	<ul style="list-style-type: none"> • Monolithic • Layered • Virtual • Client server model
3. Types of operating system	<ul style="list-style-type: none"> • Real time • Normal • Batch • Time sharing
4. Concurrency control	<ul style="list-style-type: none"> • Inter-process communication • Synchronization

Variable	Range <i>May include but is not limited to:</i>
5. Memory management techniques	<ul style="list-style-type: none"> • Partitions • Virtual
6. Memory management policies	<ul style="list-style-type: none"> • Fetch • Placement • Replacement • cleaning
7. File access methods	<ul style="list-style-type: none"> • Sequential • Random • Indexed sequential

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

- Types of operating systems
- Roles of operating system
- Objectives of memory management
- Input/output devices software
- Computer clock system
- Objectives of file management
- File allocation techniques
- File access methods
- Challenges of emerging trends in operating systems.

FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:

- Communications (verbal and written);
- Proficient in ICT;
- Time management;
- Analytical
- Problem solving;
- Planning;
- Decision making;
- Report writing;

EVIDENCE GUIDE

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

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: <ul style="list-style-type: none"> 1.1 Defined operating system 1.2 Identified Types of operating systems 1.3 Explained structures of operating systems 1.4 Identified functions of operating systems 1.5 Installed operating system. 1.6 Defined memory management 1.7 Identified memory management and allocation techniques. 1.8 Differentiated the input and output devices. 1.9 Defined computer clock system. 1.10 Explained the hardware concept of input/output device 1.11 Identified file management objectives 1.12 Identified file allocation techniques, access and protection methods. 1.13 Identified emerging trends in operating system, challenges and how to cope with them.
2. Resource Implications	<i>The following resources must be provided:</i> <ul style="list-style-type: none"> 2.1 Resources the same as that of workplace are advised to be applied Computers, Software, Data and People
3. Methods of Assessment	Competency may be assessed through: <ul style="list-style-type: none"> 3.1 Oral test 3.2 Observation 3.3 Practical demonstration
4. Context of Assessment	<ul style="list-style-type: none"> 1.1 Competency may be assessed individually in the actual workplace or through a simulated work place setting
5. Guidance information for assessment	<ul style="list-style-type: none"> 2.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.