



REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARD

FOR

COMPUTER SCIENCE TECHNICIAN

KNQF LEVEL 6

(CYCLE 3)

PROGRAMME ISCED CODE: 0613 554 A.



TVET CDACC
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CONFIGURE OPERATING SYSTEMS

ISCED UNIT CODE: 0613 554 02A

UNIT CODE: ICT/OS/CS/CR/02/6/MA

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 (<i>Bold and italicised terms are elaborated in the Range</i>)
1. Identify fundamentals of operating systems	1.1 Principles of computer software are applied 1.2 <i>Types of operating systems</i> are identified and analysed 1.3 Operating system is selected according to manufacturer's specifications 1.4 Operating system types are applied 1.5 <i>Requirements of operating systems</i> are applied 1.6 Installation of Windows is performed
2. Apply computer application software to solving tasks	2.1 <i>Word documents</i> are formatted as per job requirements 2.2 <i>Presentation slides</i> are prepared and presented in accordance with workplace procedures. 2.3 <i>Worksheets and workbooks</i> are prepared as per job requirements 2.4 <i>Database is created, populated, and manipulated</i> in accordance with workplace procedures 2.5 Data manipulation is performed 2.6 Office internet functions are implemented in accordance with office procedures 2.7 Electronic mail addresses are created in accordance to workplace communication office policy
3. Apply process management	3.1 Computer resources are monitored 3.2 Process states and transitions are monitored 3.3 Process scheduling is applied 3.4 Task Manager is utilized as per work requirements 3.5 performance monitor tool is utilized as per work task
4. Manage memory	4.1 Memory management settings are configured. 4.2 <i>Memory management techniques</i> are applied 4.3 Virtual memory management settings are configured

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicised terms are elaborated in the Range)</i>
5. Manage input and output devices	5.1 Disk operations are performed 5.2 Computer clock system is monitored 5.3 Disk is selected according to user needs 5.4 Disk management is performed as per user needs 5.5 Removable disks are selected
6. Manage files and configure local policy settings	6.1 <i>File access methods</i> are applied 6.2 File allocation techniques are verified 6.3 File protection and security measures are configured 6.4 <i>File and directory operations</i> are applied 6.5 <i>Local policy settings</i> are configured

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
1. Computer softwares may include but not limited to:	<ul style="list-style-type: none"> ● System software ● Application software ● Utility software
2. Structures of operating system may include but is not limited to:	<ul style="list-style-type: none"> ● Monolithic ● Layered ● Virtual ● Client server model
3. Types of operating system may include but is not limited to:	<ul style="list-style-type: none"> ● Real time ● Normal ● Batch ● Time sharing
4. Word documents preparation may include but not limited to:	<ul style="list-style-type: none"> ● Creation ● Editing ● Formatting ● Mail merging ● Printing
5. Slides preparation may include but not limited to:	<ul style="list-style-type: none"> ● Creation ● Editing ● Formatting ● Printing
6. Worksheets and workbooks preparation may include but not limited to:	<ul style="list-style-type: none"> ● Creation ● Data entry ● Basic formulae and functions

	<ul style="list-style-type: none"> ● Formatting ● Data sorting and filtering ● Printing
7. Database design creation and manipulation may include but not limited to:	<ul style="list-style-type: none"> ● Table design ● Form design ● Report design ● Data sorting ● Indexing ● Storage ● Retrieval/querying ● Security ● Printing
8. Computer Resources may include but is not limited to:	<ul style="list-style-type: none"> ● Processor ● Storage space
9. Computer Resources may include but is not limited to:	<ul style="list-style-type: none"> ● Processor ● Storage space
10. Memory management techniques may include but is not limited to:	<ul style="list-style-type: none"> ● Partitions ● Virtual
11. Disk storage management operations may include but is not limited to:	<ul style="list-style-type: none"> ● Shrinking volume ● Extending volume ● Formatting volume ● Partitioning volume ● Disk Optimization and defragmentation
12. Device Management Operations may include but is not limited to:	<ul style="list-style-type: none"> ● Driver Installation ● Resolving driver conflicts
13. File access methods may include but is not limited to:	<ul style="list-style-type: none"> ● Sequential ● Random ● Indexed sequential
14. File and directory operations may include but is not limited to:	<ul style="list-style-type: none"> ● Setting attributes ● Share settings ● Security settings ● Customization of files and folders
15. Local policy settings may include but is not limited to:	<ul style="list-style-type: none"> ● 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	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none">1 Selected and installed computer software according to manufacturer's specifications and user specifications1.1 Formatted Word documents as per job requirements1.2 Prepared and presented slides in accordance with workplace procedures.1.3 Prepared worksheets and workbooks as per job requirements1.4 Created, populated, and manipulated Database in accordance with workplace procedures1.5 Created electronic mail addresses in accordance to workplace communication office policy1.6 Monitored process states and transitions1.7 Configured memory management settings1.8 Configured virtual memory management settings1.9 monitored Computer clock system1.10 Performed virtual input/output operations in relation to system devices1.11 Verified Disk properties1.12 Performed disk storage management operations
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	1.13 Verified file allocation techniques 1.14 Configured file protection and security measures 1.15 Applied file and directory operations 1.16 Configured local policy 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 2.3 Resources relevant to proposed activity or task
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.