



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

CCMCS402

Apply Computer Skills

Competence

RQF Level: 4

Learning Hours



Credits: 3

Sector: All

Trade: All

Module Type: Complementary Module

Curriculum: All

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Issue Date: May 2023

Purpose statement	This module describes knowledge skills and attitudes required to apply computer skills. At the end of this module, learners will be able to describe the operating system; Customize the computer features and protect the computer.						
Delivery modality	Training delivery			100%	Assessment		Total 100%
	Theoretical content			30%	Formative assessment	30%	100%
	Practical work:			70%		70%	
	• Group Work and presentation	20%					
	• Individual Work	50%					
				Summative Assessment		N/A	












Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Describe the operating system	1.1 Operating system is properly described according to its activities
	1.2 Main Operating system components are properly described according to their services
	1.3 Operating system types are properly described according to the particular task
	1.4. Operating system file system is properly described according to their types
2.Customize the computer features	2.1. Customer requirements are properly identified for an operating system according to their needs
	2.2. Minimum Hardware Requirements are properly identified for an operating system to be used
	2.3. Operating system is properly customized according to the perspective steps
3. Protect	3.1. Software utilities are properly installed according to the manufacturer

computer system	specifications
	3.2. Computer is regularly scanned according to the elimination of virus as per safety standards
	3.3. Computer data are accurate backed up and restored based on OS installation


Course content

Learning outcomes	At the end of the module the learner will be able to: <ol style="list-style-type: none"> 1. Describe the operating system 2. Customize the computer features 3. Protect computer system
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Learning outcome 1: Describe the operating system	Learning hours: 15
Indicative content	
<ul style="list-style-type: none"> • Description of operating system <ul style="list-style-type: none"> ✓ Definition of operating system ✓ Features of operating system ✓ Functions of operating system <ul style="list-style-type: none">  Memory management  Processor management  Device management  File management  Security management  Coordination other software and users  Error detecting aids  Job accounting • Description of the main components of operating system <ul style="list-style-type: none"> ✓ User interface <ul style="list-style-type: none">  Graphical user interface (GUI)  Command Line Interface (CLI) ✓ Kernel <ul style="list-style-type: none">  Monolithic kernel 	


 Microkernel


✓ File management system

 Select group of Adjacent files or directories

 Select group of Non adjacent files or directories

 Duplicate files /folder

 Move /delete files and folders


 Downloading files/folders


- **Description of the types of operating system**

✓ Batch operating system

✓ Distributed operating system

✓ Real Time Operating System

 Hard real time operating system

 Soft real time operating system

✓ Network operating system

✓ Time –sharing operating system


✓ Mobile operating system

✓ Embedded operating system

- **Description of the operating system file system**

✓ File system role

✓ Major types of file systems in Microsoft windows











 File Allocation Table (FAT12, FAT16, FAT32)










 New Technology File System (NTFS)

Resources required for the learning outcome












Resources required for the learning outcome	
Equipment	<ul style="list-style-type: none">▪ Computer▪ Projector▪ Whiteboard
Materials	<ul style="list-style-type: none">▪ Marker▪ Flipchart

Tools	<ul style="list-style-type: none"> ▪ CD ▪ DVD ▪ Flash driver ▪ Reference books
Facilitation techniques	<ul style="list-style-type: none"> ▪ Individual and group work ▪ Individualized ▪ Trainer guided ▪ Group discussion
Formative assessment methods	<ul style="list-style-type: none"> ▪ Written assessment ▪ Oral presentation ▪ Performance assessment

Learning outcome 2: Customize the computer features	Learning hours: 10
Indicative content	
<ul style="list-style-type: none"> • Identification of the customer requirements for an operating system <ul style="list-style-type: none"> ✓ Requirements to be considered <ul style="list-style-type: none">  Budget constraints  Compatibility with current hardware  Compatibility with new hardware  How the computers will be used?  Compatibility with existing applications  Types of new applications to be used • Identification of the minimum hardware requirements for an operating system <ul style="list-style-type: none"> ✓ Basic requirements for installing windows 10 on PC <ul style="list-style-type: none">  RAM capacity:1Gigabyte (1GB) for 32-bits or 2 Gigabytes (2GB) for 64-bits  Hard drive size:16 GB for 32-bits or 32 GB for 64-bits OS  Graphics card: DirectX or later with WDDM 1.0 driver  Processor: 1GHZ or faster processor or System on a Chip 	

<ul style="list-style-type: none">  Display: 800 x 600 ✓ Common hardware upgrades • Customization of the operating system <ul style="list-style-type: none"> ✓ Windows settings <ul style="list-style-type: none">  Creating a user account  Manage user account  Window Personalization ✓ Disk management <ul style="list-style-type: none">  Disk partitioning  Disk formatting  Disk clean up ✓ Windows administrative tools <ul style="list-style-type: none">  Task scheduler  Event viewer ✓ Control panel settings 	
Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> ▪ Computer ▪ Projector ▪ Whiteboard
Materials	<ul style="list-style-type: none"> ▪ Marker ▪ Flipchart
Tools	<ul style="list-style-type: none"> ▪ CD ▪ DVD ▪ Flash Driver ▪ Reference books
Facilitation techniques	<ul style="list-style-type: none"> ▪ Demonstration and simulation ▪ Individual and group work ▪ Practical exercise

	<ul style="list-style-type: none"> ▪ Individualized ▪ Trainer guided ▪ Group discussion
<ul style="list-style-type: none"> • Formative assessment methods 	<ul style="list-style-type: none"> ▪ Written assessment ▪ Oral presentation ▪ Performance assessment

Learning outcome 3: Protect computer system	Learning hours: 5
Indicative content	
<ul style="list-style-type: none"> • Installation of software utilities <ul style="list-style-type: none"> ✓ Description of software tools \utilities <ul style="list-style-type: none">  Anti-virus  Anti-malware  Anti-spyware  Backup software  Backup media ✓ Installation of software tools\utilities <ul style="list-style-type: none">  Anti-virus  Anti-malware  Anti-spyware • Scanning and Eliminating virus <ul style="list-style-type: none"> ✓ Description of scan types ✓ Description of scan mode ✓ Virus elimination <ul style="list-style-type: none">  Elimination by neutralization  Elimination by deleting  Elimination by quarantine 	

- **Backing up and restoring of computer data**

- ✓ Description of backup types

- + Full backup
- + Differential backup
- + Incremental backup
- + Copy backup
- + Mirror backup
- + Daily backup

- ✓ Selection of common backup devices

- + Tape drive
- + Optical Discs
- + USB flash drivers
- + SD card
- + HDD/SSD

- ✓ Selection of common restore devices

- + HDD/SSD
- + USB flash Drivers
- + Tape drive
- + SD Card and Optical drives

Resources Required For The Indicative Content

Equipment	<ul style="list-style-type: none"> ▪ Computer ▪ Projector ▪ Whiteboard
Materials	<ul style="list-style-type: none"> ▪ Markers ▪ Flipchart
Tools	<ul style="list-style-type: none"> ▪ USB/ Flash Driver ▪ HDD ▪ SD Card

	<ul style="list-style-type: none"> ▪ Tape drives ▪ Reference books
Facilitation techniques	<ul style="list-style-type: none"> ▪ Demonstration and simulation ▪ Individual and group work ▪ Practical exercise ▪ Individualized ▪ Trainer guided ▪ Group discussion
Formative assessment methods	<ul style="list-style-type: none"> ▪ Written assessment ▪ Oral presentation ▪ Performance assessment

References:

1. https://www.tutorialspoint.com/operating_system/operating_system_tutorial.pdf 2. 2.
2. <https://www.cl.cam.ac.uk/teaching/1011/OpSystems/os1a-slides.pdf>
2. <https://www.ukessays.com/essays/computer-science/classification-of-operating-systems-ii-computer-science-essay.php>
3. <https://support.microsoft.com/en-us/windows/backup-and-restore-in-windows-352091d2-bb9d-3ea3-ed18-52ef2b88cbef>
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5. <https://www.techtarget.com/searchdatabackup/feature/Full-incremental-or-differential-How-to-choose-the-correct-backup-type>
6. <https://www.indeed.com/career-advice/career-development/types-of-operating-systems>
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