

Department/ Program: ND Computer Science	Course Code:	CPT 211	Contact Hours: 4 hours/week
Subject/Course: Computer Systems Troubleshooting I			Theoretical: 1 hours/week
Year: Two Semester: Three	Pre-requisite:		Practical: 3 hours /week

General Objectives:

The course Provides the knowledge and skills to begin to repair Hardware & software

1. To understand the process of fault diagnosis.
2. To understand the causes of computer start up failure.
3. To understand memory failure symptoms.
4. To understand hard drive failure symptoms.
5. To understand floppy drive failure symptoms
6. To understand CD-ROM failure symptoms.
7. To understand mouse and keyboard failure symptoms.
8. To understand Display system failure symptoms.
9. To understand sound failure symptoms.

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Subject/Course: Computer Systems Troubleshooting I					Theoretical: 1 hours/week	
Year: Two		Semester Three		Pre-requisite:		Practical: 3hours /week
Theoretical Content				Practical Content		
General Objective: To understand the process of fault diagnosis						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
1	Student will understand : The power on self test. Power fault diagnosis.	To explain : How to complete a fault report form The visible and audible codes. How to check the motherboard and other PC components power supply connections.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: Complete the fault report form. Specify the POST error Messages. Check the motherboard and other PC components power supply.	To help student to: Complete the fault report form. Specify the POST error Messages Check the motherboard and other PC components power supply.	Personal computer loaded with diagnostics packages.
2	The student will be able to understand : The usage of different software diagnostic tests for hardware.	To explain: How to use a variety of software diagnostic test.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes.	The ability to use: Software diagnostic packages to test hardware.	To help student how to use diagnostic packages.	Personal computer loaded with diagnostics packages.

			Smart/White board			
General Objective: To understand and repair the causes of computer start up failure						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
3	The student will be able to recognise the causes of start up failure.	To explain: Why the display is on but several beeps heard. Why no beeps were heard, but the POST runs and the system starts up normally with faults.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: Identify and name the type of the faults from hearing the beeps. Identify the type of faults from the error messages. Remedy the fault by taking appropriate hardware/software repair and /or re-instalment.	To assist the student to : Identify and name the type of the faults from hearing the beeps. Identify the type of faults from the error messages. Remedy the fault by taking appropriate hardware/software repair and /or re-instalment.	Personal computer loaded with diagnostics packages.
4	Student will be able to recognise the causes of start up failure	To explain: How to take note off the fault message from the screen. Why the power LED is on but nothing else happened. Why the system does not switch on.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: Identify and name the type of the faults from hearing the beeps. Identify the type of faults from the error messages. Remedy the fault by taking appropriate hardware/software repair and /or re-instalment.	To assist the student to : Identify and name the type of the faults from hearing the beeps. Identify the type of faults from the error messages. Remedy the fault by taking appropriate	Personal computer loaded with diagnostics packages.

					hardware/software repair and /or re- instalment.	
General Objective: To understand and memory failure symptoms						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
5	The student will be able to: Recognise the causes of memory failure.	To explain: How to recognise POST error message code as memory failure. Memory failure remedy.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : Recognise POST error message code as an indication of a memory problem. Rectify the memory problem by reinsertion or replacement.	To help student to : Recognise POST error message code as an indication of a memory problem. Rectify the memory problem by reinsertion or replacement.	Personal computer loaded with diagnostics packages.
6	The student will be able to understand and recognise: The causes of hard drive failure.	To explain: How to use scandisk software to detect hard drive problems such as: Slow disk access and failure to read from hard drive.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: Recognise POST error message code as an indication of a hard drive problem. Rectify the hard drive problem by replacement and/or reformatting.	To help student to : Recognise POST error message code as an indication of a hard drive problem. Rectify the hard drive problem by replacement and/or reformatting	Personal computer loaded with diagnostics packages.

General Objective: To understand floppy drive failure symptoms						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
7	<p>The student will be able to understand and recognise:</p> <p>The cause of floppy drive failure and repair it.</p>	<p>To explain:</p> <p>How to use scandisk software to detect floppy drive problems such as:</p> <p>Slow disk access and failure to read from floppy disk.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a floppy drive problem.</p> <p>Rectify the floppy drive problem by replacement and/or reformatting.</p>	<p>To help student to :</p> <p>Recognise POST error message code as an indication of a floppy drive problem.</p> <p>Rectify the floppy drive problem by replacement and/or reformatting</p>	<p>Personal computer loaded with diagnostics packages.</p>
8	<p>The student will be able to understand and recognise:</p> <p>The cause of CD-ROM drive failure and repair it.</p>	<p>To explain:</p> <p>How to recognise POST error message code as CD-ROM failure</p> <p>Why data cannot be accessed from the CD-ROM drive.</p> <p>Why the CD-ROM drive is not registered.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a CD-ROM drive problem.</p> <p>Rectify the CD-ROM drive problem by replacement and/or reformatting</p>	<p>To help student to :</p> <p>Recognise POST error message code as an indication of a CD-ROM drive problem.</p> <p>Rectify the CD-ROM drive problem by replacement and/or reformatting</p>	<p>Personal computer loaded with diagnostics packages</p>

General Objective: To understand mouse and keyboard failure symptoms						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
9	<p>The student will be able to understand and recognise:</p> <p>The causes of mouse and keyboard failure.</p>	<p>To explain:</p> <p>Why the mouse/keyboard are not recognise in window.</p> <p>Why the cursor may be difficult to move.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a mouse/keyboard problem.</p> <p>Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.</p>	<p>To help students to:</p> <p>Recognise POST error message code as an indication of a mouse/keyboard problem.</p> <p>Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.</p>	<p>Personal computer loaded with diagnostics packages</p>
10	<p>The student will be able to understand and recognise:</p> <p>The causes of mouse and keyboard failure.</p>	<p>To explain:</p> <p>Why the cursor movements may be jerky.</p> <p>Why some keys may not function properly.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a mouse/keyboard problem.</p> <p>Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.</p>	<p>To help students to:</p> <p>Recognise POST error message code as an indication of a mouse/keyboard problem.</p> <p>Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.</p>	<p>Personal computer loaded with diagnostics packages</p>

General Objective: To understand Display system failure symptoms						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
11	<p>The student will be able to:</p> <p>Recognise the cause of display system failure.</p> <p>Fix display system failure.</p>	<p>To explain:</p> <p>How to test the monitor connections.</p> <p>How to test monitor power supply.</p> <p>How to test a video card and reseal to check its functionality again.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a display/graphic card problem.</p> <p>Rectify the display/graphic card problem by replacement and/or part replacement.</p>	<p>To help student to:</p> <p>Recognise POST error message code as an indication of a display/graphic card problem.</p> <p>Rectify the display/graphic card problem by replacement and/or part replacement.</p>	<p>Personal computer loaded with diagnostics packages</p>
12	<p>The student will be able to:</p> <p>Recognise the cause of display system failure.</p> <p>Fix display system failure.</p>	<p>To explain:</p> <p>How to replace the video card.</p> <p>How to replace the motherboard if the video card is embedded in the motherboard.</p>	<p>PC connected to an OHP.</p> <p>Power Point presentation of Lectures.</p> <p>On line lecture notes.</p> <p>Smart/White board</p>	<p>The ability to:</p> <p>Recognise POST error message code as an indication of a display/graphic card problem.</p> <p>Rectify the display/graphic card problem by replacement and/or part replacement.</p>	<p>To help student to:</p> <p>Recognise POST error message code as an indication of a display/graphic card problem.</p> <p>Rectify the display/graphic card problem by replacement and/or part replacement.</p>	<p>Personal computer loaded with diagnostics packages</p>
13	<p>The student will be able to:</p> <p>Recognise the cause of display system failure.</p>	<p>How to check :</p> <p>Windows display properties.</p>	<p>PC connected to an OHP.</p>	<p>The ability to:</p>	<p>To help student to:</p> <p>Recognise POST</p>	<p>Personal computer loaded with</p>

	Fix display system failure.	Display adaptor in device manager.	Power Point presentation of Lectures. On line lecture notes. Smart/White board	Recognise POST error message code as an indication of a display/graphic card problem. Rectify the display/graphic card problem by replacement and/or part replacement.	error message code as an indication of a display/graphic card problem. Rectify the display/graphic card problem by replacement and/or part replacement.	diagnostics packages
General Objective: To understand sound failure symptoms						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
14	The student will be able to: Recognise the cause of display system failure. Fix display system failure.	To explain how to check: Windows volume control. Device conflicts in device manager. Speaker.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: Recognise POST error message code as an indication of a sound card problem. Rectify the sound card problem by replacement and/or part replacement.	To help students to: Recognise POST error message code as an indication of a sound card problem. Rectify the sound card problem by replacement and/or part replacement	Personal computer loaded with diagnostics packages
15	The student will be able to: Recognise the cause of display system failure. Fix display system failure.	To explain how to check: Reset the sound card. And replace the sound card.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes.	The ability to: Recognise POST error message code as an indication of a sound card problem. Rectify the sound card problem by replacement and/or part replacement.	To help students to: Recognise POST error message code as an indication of a sound card problem. Rectify the sound card problem by	Personal computer loaded with diagnostics packages

		And replace the motherboard for embedded sound chips.	Smart/White board		replacement and/or part replacement	
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