

<b>Department/ Program: Computer Science</b>	<b>Course Code:</b>	<b>CPT 124</b>	<b>Contact Hours: 4 hours/week</b>
<b>Subject/Course: Network Hardware and Installation</b>			<b>Theoretical: 1 hours/week</b>
<b>Year: 1 Semester: 2</b>	<b>Pre-requisite:</b>	<b>CPT 111</b>	<b>Practical: 3 hours /week</b>

### **General Objectives**

This course introduces the students to the basics of network hardware installations.

1. To provide an introduction to network hardware installation.
2. To understand the requirements for cabling and network components.
3. To Construct and assemble a simple network using two computers.

<b>Department/ Program: Computer Technology</b>			<b>Course Code:</b>	<b>CPT 124</b>	<b>Total Hours: 4 hours/week</b>	
<b>Subject/Course: Network Hardware and Installation</b>					<b>Theoretical: 1 hours/week</b>	
<b>Year: 1</b>	<b>Semester: 2</b>		<b>Pre-requisite:</b>	<b>CPT 111</b>	<b>Practical: 3 hours /week</b>	
	Theoretical Content			Practical Content		
<a href="#">General Objective 1: To provide an introduction to network hardware installation..</a>						
Week/ s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
1	To understand the:  Network installation process.	To discuss:  The network installation process.  To introduce and explain the network installation equipments.  To explain the properties of different network equipments.	PC connected to an OHP  Power point presentation of lectures  Online lecture notes  Internet access. Smart board/ White board.	The ability to:  Differentiate and identify the equipment used in the network installation.	To demonstrate to :  The student the network installation equipments.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card

[General Objective 2: To understand the requirements for cabling and network components.](#)

Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
2	To understand: The components of a simple network using a Coaxial cable	To show: Section of Coaxial cable [Core, Insulation, shield, earth wire, and outer skin].  <b>To explain:</b> The properties of Coaxial cable, ( Impedance, Flexibility and insulation)  To show and explain the function of:  BNC , T section, connectors, and Terminators	PC connected to an OHP  Power point presentation of lectures  Online lecture notes  Internet access. Smart board/ White board.	The ability to:  Assemble a Coaxial cable	To demonstrate how to:  Prepare and build a simple network using a Coaxial cable.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card
3	To understand: The components of a simple network using a UTP cable.	<b>To show:</b> Section of UTP cable. [Wires, Insulation, shield, earth wire, and outer skin].  To explain: The properties of	PC connected to an OHP  Power point presentation of lectures  Online lecture	The ability to:  Assemble a UTP cable.	To demonstrate how to:  Prepare and build a simple network using a UTP cable.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables

		<p>UTP cable., ( Impedance, Flexibility and insulation)</p> <p>To show and explain the function of:</p> <p>RJ45 plug and socket Crossed and striate cables.</p> <p>Assembling a UTP cable with the end plugs.</p>	<p>notes</p> <p>Internet access. Smart board/ White board.</p>			<p>BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card</p>
4	<p>To understand:</p> <p>The process of Wall socket installation</p>	<p>To show:</p> <p>Different types of wall sockets.</p> <p>To explain the properties of different wall sockets.</p> <p>To describe the steps used in wall socket installations. Describe</p> <p>To show pictures of typical wall socket</p>	<p>PC connected to an OHP</p> <p>Power point presentation of lectures</p> <p>Online lecture notes</p> <p>Internet access. Smart board/ White board.</p>	<p>The ability to:</p> <p>Install different wall sockets.</p>	<p>To demonstrate how to:</p> <p>Install different wall sockets.</p>	<p>Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel</p>

		installation.  To show and explain how to use the equipments required for wall socket installation.				Network interface card
5	To understand:  The need and the process of Network cables trunking.	To show : Different types of trunking.  To explain the properties of different trunking materials.  To describe the steps used in trunking installations.  To show pictures of typical trunking installations.  To show different types of trunking material in use (Metal Plastic, with varying size and shapes.....)  To show and explain	PC connected to an OHP  Power point presentation of lectures  Online lecture notes  Internet access. Smart board/ White board.	The ability to:  Install trunking.	To demonstrate how to:  Trunking installation is performed	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Trunking Patch panel Network interface card

		how to use the equipments required for trunking.				
6	To understand: How to install and connect Patch Panel in a typical network.	To show : Different types of patch Panel.  To explain the properties of different patch Panel.  To describe the steps used in patch Panel. Installations.  To show pictures of typical patch Panel.  To show and explain how to use the equipments required for patch panel installation.  To show how to connect to a patch panel.	PC connected to an OHP  Power point presentation of lectures  Online lecture notes  Internet access. Smart board/ White board.	The ability to:  Connect a patch panel in a typical network.	To demonstrate how to:  Connect a patch panel in a typical network.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Trunking Patch panel Network interface card
7	To understand: How to install and connect Network	To show : Different types of Network Interface Card.	PC connected to an OHP  Power point	The ability to:  Recognise different network cards.	To demonstrate how to:  Investigate a	Hubs Switches Network cables

	Interface Card in a typical computer system.	<p>To explain the properties of different Network Interface Card</p> <p>To describe the steps used in Network Interface Card Installations.</p> <p>To show pictures of typical Network Interface Card.</p> <p>To show and explain how to install Network Interface Card</p>	<p>presentation of lectures</p> <p>Online lecture notes</p> <p>Internet access.</p> <p>Smart board/ White board.</p>	<p>Insert and replace a network card.</p> <p>Test a network card.</p>	<p>network card.</p> <p>Insert and replace a network card.</p> <p>Test a network card.</p>	<p>RJ45 Wall Socket</p> <p>Coaxial Cables</p> <p>BNC connectors</p> <p>T connectors</p> <p>Strait connectors</p> <p>Terminators</p> <p>Truncking Patch panel</p> <p>Network interface card</p>
--	--	---	--	---	--	--

General Objective 3: To Construct and assemble a simple network using two computers.						
Week/s	Specific Learning Outcomes	Teacher's activities	Resources	Specific Learning Outcomes	Teacher's activities	Resources
8	<p>To understand:</p> <p>How to build a simple network using UTP cable</p>	<p>Explain how to:</p> <p>Connect two computers using UTP cable.</p>	<p>PC connected to an OHP</p> <p>Power point presentation of lectures</p>	<p>The ability to:</p> <p>Connect two computers using crossed UTP cable.</p>	<p>To demonstrate how to:</p> <p>Connect two computers using UTP cable.</p>	<p>Hubs</p> <p>Switches</p> <p>Network cables</p> <p>RJ45</p> <p>Wall Socket</p>

9	How to build a simple network using UTP cable	Connect two computers using UTP cable	Online lecture notes  Internet access. Smart board/ White board.			Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card
10	To understand:  How to build a small network using coaxial cable.	Explain:  How to connect two computers using Coaxial cable.	PC connected to an OHP  Power point presentation of lectures	The ability to:  Connect two computers using Coaxial cable.	To demonstrate how to:  Connect two computers using a Coaxial cable.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card
11	How to build a small network using coaxial cable.	How to connect a number of computers using Coaxial cable and in a bus topology format.	Online lecture notes  Internet access. Smart board/ White board.			Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card

12	To understand: How to build a star network using Hub or switch.	To explain : The function of a Hub and switch. The type of wire used in linking a Hub or switch to a Computer. How to connect two computers using the hub or switch in a star topology.	PC connected to an OHP Power point presentation of lectures Online lecture notes Internet access. Smart board/ White board.	The ability to: Connect two or more computers using hub or switch in a star topology.	To demonstrate how to: Connect two or more computers using hub Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors Strait connectors Terminators Truncking Patch panel Network interface card	
13		To explain How to connect a number of computers using a hub or switch in a star topology. The testing process.				
14	To understand: How to build a ring network using Switch or Hub.	To explain : How to connect two computers using the Switch or hub in a ring topology.	PC connected to an OHP Power point presentation of lectures	The ability to: Connect two or more computers using a Switch in a ring topology.	To demonstrate how to: Connect two or more computers using a Switch or hub in a ring topology.	Hubs Switches Network cables RJ45 Wall Socket Coaxial Cables BNC connectors T connectors
15	How to build a ring network using Switch or Hub.	How to connect a number of computers using a hub or switch in a ring topology.	Online lecture notes Internet	.	.	

		The testing process.	access. Smart board/ White board.			Strait connectors Terminators Truncking Patch panel Network interface card
--	--	----------------------	---	--	--	--

**Assessment:** Course tests 20%; Practical Lab Activities 50 %; Examination 30%.

**Recommended Textbooks & References:**