

## Computer Networking

1. Name : Computer Networking.  
 2. Sector : Information & Communication Technology (ICT)  
 3. Code : ICT206  
 4. Entry Qualification : Minimum 10th Std. & 14 years and above.  
 MES Module on Computer Fundamentals, MS-Office,  
 Internet & Soft Skills
5. Terminal Competency : After completion of the training, participants would be able to:  
 Interconnect computers using switch and establish peer-to- peer,  
 client-server connection Create user's groups and allocate rights  
 and privileges
6. Duration : 180 hrs.  
 7. Contents :

Practical Competencies	Underpinning Knowledge (Theory)
<p><b>Computer parts and peripherals</b> - Identify the controls of each of these devices including the system (CPU) unit.                      Practice windows operating system. Identify system specifications.                      Identify physically devices interfaces installed with a PC, Check status of installed devices using system information and device manager.                      Practice facilities provided by the device manager.                      Install a new device (internal/external) to the PC and carryout necessary setting.                      Identify components of a simple LAN environment.                      Identify different types of cables used for networking.                      Identify the protocols installed in an existing LAN setup, Draw LAN diagram, Identify the NIC installed &amp; MAC address ,Install of NIC card.                      Make UTP cross cable and testing using continuity tester. Establish connection between two computers using a cross cable                      Make a UTP straight patch cord and testing using continuity tester. Connect and test a straight cable using a N-port switch and computers. Establish a peer-to-peer connection. Configure a router Add/ Delete entries in configuration task. Create work groups.                      Set IP address and subnet mask. Establish connection. Use of Ping command. Establish sub networks using subnet mask. Share resources in LAN. Fault find and troubleshoot network problems.                      Trace a network route. Create users, allocate rights and testing. Implement security in LAN. Use Linux commands. Install and uninstall devices using Linux command. Set-up LAN under Linux.</p>	<p>Basic blocks of a digital computer. Function of each block. Personal computer organization. Introduction to various generations of PC's. Brief working and usage of I/O and memory devices used in a PC.                      Working with computer using windows operating system, Interfacing I/O device to motherboard. Need and function of driver. Identifying devices installed in the PC. Enabling, disabling, refreshing, checking properties of devices installed. Installing new devices, setting and testing                      Serial data communication, principle, standards/protocols and devices/ applications.                      Parallel data communication, principle, standards/protocols and devices/ applications.                      Features of Networked computers, Components required for networking, Network Topologies. Comparison. Network Protocols, applications, Physical components planning for a small LAN.                      Network operating systems and features.                      Network cables, types, specifications, standards, application. Peer – to – peer connection. Client – server connection, comparison, applications.                      What is router, its function, configuration table.                      Concept of work groups and uses. UTP Cross cable for testing connection between two computers.                      UTP straight cable and connecting through N-port Switch. Allocation of IP address and Subnet mask.                      Cabling procedures and introduction to structured cabling. Resource sharing in LAN environment.                      Creating users in Widows server. Resource sharing and Security. Sharing a single internet connection in LAN, with or without the use of Proxy. Multi user OS.</p>

### Tools & Equipment

#### Hardware

- PCs – Server and Clients with latest configuration
- Networking tools ie. Hub, Switch, Cables, Modem, Router etc.
- Internet Connection

#### Software

- Microsoft Windows 2003 Server, Windows 95/98/2000/XP, Linux Server
- Antivirus and Network trouble shooting utilities.