

Curriculum For Computer Network Technician (Certificate Level- 6 months)



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Overall objective of the course

To prepare the trainees to work as Computer Network Technicians in a wide variety of computer-related industries and has a strong emphasis on Network related problems.

Competencies gained after completion of the course

Knowledge Proficiency Details

- Knowledge of Information technology catering principles and capabilities with particular emphasis on the technical support of local area networks.
- Knowledge in supporting of microcomputer network operating systems with hardware troubleshooting.
- Knowledge of the operational and fault tolerance techniques in networking environment.

Skills Proficiency Details

- Hands on in maintaining all network technologies regarding with local area network in all installation and configuration techniques.
- Perform various tests to detect and remove software malfunctioning through antivirus utilities.
- Apprehend of preparing straight and cross cables through crimping tools set.
- Ability to create different user groups and assigning of different rights and permissions.
- Ability to recover data from damaged disks to ensure data consistency.
- Capable of taking all safety measures to prevent a network from electricity jerk, firing and any sort of damaging conditions.

Job Opportunities available immediately and in future

- Entry-level jobs
- Network supporting technician
- Computer operators
- Installers
- Troubleshooters
- Help desk support
- Network technicians

Curriculum Salient Points

Entry-level	SSC/Matric Tech
Duration of Course	6 months
Total Training Hours	800-hours
Training Hours/week	40-Hours per Week (six days a week)
Training Hour a day	7-hours per day (Friday 5 hours)
Training Methodology	20 % Theory
	80 % Practical
Medium of Instruction	English / Urdu

Overview about the program – Curriculum for Computer Network Technician

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours
Module 1: Fundamentals of IT Aim: This module covers the basic elements of Information Technology	LU-1 Introduction to Information Technology	07 Hrs	Nil
	LU-2 Introduction to Computer Hardware	14Hrs	50 Hrs
	LU-3 Introduction to Computer Software	09 Hrs	24 Hrs
Module 2: Computer Networking Aim: This Module will enable the students to understand the basic concept of computer networks, the different types of computer networks/communication and configuration of different network devices.	LU-1 Introduction to Computer Network	21 Hrs	30 Hrs
	LU-2 Network fundamentals	11 Hrs	16Hrs
	LU-3 Transmission Media	14 Hrs	Nil
	LU-4 Types of connectors	04 Hrs	18Hrs
Module 3: Client end/window 7 Aim: This Module will make the students to understand the Desktop Operating System, the role of Operating System in computing environment, Networking Features in Operating System and will gain hands on practice on Windows 7.	LU-1 Introduction to Operating Systems	03 Hrs	18 Hrs
	LU-2 Features of Windows 7	03 Hrs	18 Hrs
	LU-3 Administrator Tools	16 Hrs	144 Hrs

<p>Module 4: Connectivity</p> <p>Aim: This Module will impart the knowlegde of understanding the role of OSI Model, TCP/IP Suite and will enable the student to have hands on practice of IP addressing.</p>	<p>LU-1 Introduction of OSI Model</p> <p>LU-2 Introduction of TCP/IP Model</p> <p>LU-3 IP Addressing</p>	<p>10 Hrs</p> <p>8 Hrs</p> <p>10 Hrs</p>	<p>Nil</p> <p>10 Hrs</p> <p>55 Hrs</p>
<p>Module 5: Introduction to Window Server 2008</p> <p>Aim: This module will enable the students to:</p> <ul style="list-style-type: none"> • Understand the role of Server Operating System in Networking Environment • Create Active Directory Infrastructure Tools • Understand various administrator tools 	<p>LU-1 Introduction to Windows Server 2008</p> <p>LU-2 Features of Windows Server 2008 Environment</p>	<p>12 Hrs</p> <p>11Hrs</p>	<p>30Hrs</p> <p>90 Hrs</p>
<p>Module 6: Trouble Shooting of a Network</p> <p>Aim: This module will help the students to understand the troubleshooting methods of connectivity, Window 7 and Window server 2008.</p>	<p>LU-1 Connectivity issues</p> <p>LU-2 Window 7 trouble shooting methods</p> <p>LU-3 Window server 2008 trouble shooting Methods</p>	<p>Nil</p> <p>Nil</p> <p>Nil</p>	<p>30 Hrs</p> <p>35 Hrs</p> <p>35 Hrs</p>
	<p>Total hours</p>	<p>160 Hrs</p>	<p>640 Hrs</p>

Computer Networking Technician Curriculum Contents

Module 1 Title: Fundamentals of Information Technology

Objective of the Module: This module covers the basic elements of Information Technology

Duration: Total :104 hours **Theory:** 30 hours **Practice:** 74 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Introduction to Information Technology	Understand computer basics	Theoretically explain the concept of: i. Introduction to Computer ii. Computer History iii. Computer generation iv. Data types, Processing Cycle v. Computer in Real life	07 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • Videos / Demos 	Class Room/ Lab
LU2- Introduction to Computer Hardware	Able to understand and use various components of computers	Demonstrate and install: i. Input/output Devices (Keyboard, Mouse, Printer, Scanner) ii. CPU (CU, ALU, Cache) iii. Memory and its Type (Primary & Secondary) iv. Portable Devices (Flash Drive, Card Reader, External Drives and other peripherals)	42 Hrs	<ul style="list-style-type: none"> • Presentation • Computers • Demos / Simulation • Hardware equipment • Tool kits 	Class Room/ Lab
	Install and configure computer system	Demonstrate and assemble: i. Motherboard (Data Cables, Sockets, Ports) ii. Storage devices (Hard Drive, CD/DVD) iii. Cards (NIC, Modem, VGA, Sound etc)	21 Hrs	<ul style="list-style-type: none"> • Presentation • Computers • Demos / Simulation • Hardware equipment • Tool kits 	

LU3- Introduction to Computer Software	Understand the computer software and types of software	Explain theoretically the concept and use of: <ul style="list-style-type: none"> i. Software and its Types ii. System Software and its uses iii. Application Software and its uses 	04 Hrs	<ul style="list-style-type: none"> • Presentation manuals • Handouts • Hardware equipment • Tool kits 	Class Room/ Lab
	Install and configure a Computer System	Explain and Perform installation steps of: <ul style="list-style-type: none"> i. Formatting, Disk Managing & Partitioning ii. Operating System (Windows 7) iii. Anti-Virus iv. Drivers 	29 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • Videos / Demos 	

Module 2 Title: Computer Networking

Objective of the Module: Enable the students to understand the basic concept of computer networks, the different types of computer networks/communication, configuration of different network devices and Creating different network scenarios in a network simulator (packet tracer)

Duration: 158 hours **Theory:** 50hours **Practice:** 108 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Introduction to Computer Network	Understand the Concept of Network	Briefly describe theoretical concept of: i. Computer Networks ii. Advantages / Disadvantages of Networks	04 Hrs	<ul style="list-style-type: none"> • Presentations, • Videos / Demos • Simulations • Manuals 	Classroom / Lab
	Explain Different types of Networks	Explain theoretical concept of: i. Local Area Network (LAN) ii. Metropolitan Area Network (MAN) iii. Wide Area Network (WAN)	04 Hrs		
	Define kinds of terminologies of network	Explain pros & cons of: i. Peer-to-Peer Network ii. Server Base Network iii. Hybrid Network iv. Data , Data rate, Bursty data v. Baud rate, Peak data rate vi. Bandwidth	13 Hrs		
	Define Physical Layout/Design of Network	Explain the layout of: i. Bus Topology ii. Star Topology iii. Ring Topology iv. Hybrid Topology	29 Hrs		
LU2- Network fundamentals	Use different Connectivity Devices of Network	Demonstrate & examine use of: i. Node, NIC and Modem ii. Access point iii. Hub (active & Passive)	71 Hrs	<ul style="list-style-type: none"> • Presentations, • Videos / Demos • Simulations • Manuals 	Classroom / Lab

		iv. Repeaters & Bridge v. Switch & Router		<ul style="list-style-type: none"> • Network Equipment 	
LU3- Transmission Media	Define Transmission	Explain the use of: i. Simplex ii. Half duplex iii. Full duplex	04 Hrs	<ul style="list-style-type: none"> • Presentations, • Videos / Demos • Simulations 	Classroom / Lab
	Understand & work on different types of Bounded / Guided media	Describe physical layout of various cables and their usage: i. Coaxial cable (10Base2, 10 Base 5, 10Base T, 10BaseFL, 100Base X) ii. Twisted Pair Cable (Cat 1, Cat 2, Cat 3, Cat 4, Cat 5, Cat 6) iii. Fiber Optic Cable	07 Hrs		
	Understand & work on different types of unbounded / unguided media	Describe unguided media and their uses: i. Terrestrial Microwaves ii. Radio Waves iii. Satellite iv. Wireless Communication	03 Hrs		
LU4- Types of connectors	Understand and punch various type of connectors	Demonstrate and punching of various types of cables / connectors i. RJ-45 ii. RJ-11 iii. BNC iv. Kevlar(fiber optic) v. DB-9(Serial) vi. DB-25(Parallel)	22 Hrs	<ul style="list-style-type: none"> • Cables • RJ-45 • RJ-11 • BNC • Kevlar(fiber optic) • DB-9(Serial) • DB-25(Parallel) 	Classroom / Lab

Module 3 Title: Client End/Window 7

Objective of the Module: Enable the students to

Understand Desktop Operating System, the role of Operating System in computing environment, Networking Features in Operating System and to attain hands on practice on Windows 7

Duration: 202 hours **Theory:** 22 hours **Practice:** 180 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Introduction to Operating Systems	Understand and Install MS Windows-7	Demonstrate and install / configure: <ol style="list-style-type: none"> i. 32 bits and 64 bits OS ii. FAT-16/32, NTFS, iii. Configuration of Disks iv. Preparing Partitions and Volumes v. Configurations of Device Drivers vi. Install / Upgrade / Troubleshoot Operating System 	21 Hrs	<ul style="list-style-type: none"> • Windows 7 with SP1 • Computers • Presentations • Demos / Videos • Manuals 	Classroom / Lab
LU2- Features of Windows 7	Understand and manage different types of File/ Folder System, Cryptography and Memory Management	Demonstrate and install / configure: <ol style="list-style-type: none"> i. NTFS permissions ii. Compress and uncompressed data iii. Data encryption and decryption iv. Memory quota implementation 	21 Hrs	<ul style="list-style-type: none"> • Windows 7 with SP1 • Computers • Presentations • Demos / Videos • Manuals 	Classroom / Lab
LU3- Administrator Tools	Understand and manage various tasks, utilities, etc.	Demonstrate and manage / configure: <ol style="list-style-type: none"> i. Component Services ii. System Management iii. User Accounts iv. Event Viewer v. iSCSI Initiator Local Security Policy vi. Performance Monitor vii. Task Scheduler viii. Windows Firewall / Defender ix. Diagnostic Tools x. Network Configuration xi. Remote Desktop Connections xii. Optimizer / Compressor xiii. Backup and Restore 	160 Hrs	<ul style="list-style-type: none"> • Windows 7 with SP1 • Computers • Presentations • Demos / Videos • Manuals 	Classroom / Lab

Module 4 Title: Connectivity

Objective of the Module: Prepare the students to gain hands on practice of IP addressing and understand the role of OSI Model & Understanding of TCP/IP Suite

Duration: 93 hours **Theory:** 28 hours **Practice:** 65 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Introduction of OSI Model	Understand the role of OSI Model Layers in Networking	Explain in detail OSI Model: i. Application Layer ii. Presentation Layer iii. Session Layer iv. Transport Layer v. Network Layer vi. Data-link Layer vii. Physical Layer	10 Hrs	<ul style="list-style-type: none"> • NICs • Modems • Access points • Hubs • (active & Passive) • Repeaters • Bridges • Switch & Router • Computer systems 	Classroom / Lab
LU2- Introduction of TCP/IP Model	Use TCP/IP Model	Explain in detail TCP/IP Model: i. Explain and demonstrate Five Layers overview	18 Hrs	<ul style="list-style-type: none"> • Presentation, • Simulation • Videos 	Classroom / Lab
LU3- IP Addressing	Define and classify IP Addresses, Use of FLSM and VLSM and Subnet Masking.	Demonstrate and Explain IP Addresses i. IPv4 & IPv6 ii. IP Classes / Range iii. Network ID / BID iv. FLSM Computation v. VLSM Computation vi. Subnet Masking	65 Hrs	<ul style="list-style-type: none"> • Presentation, • Simulation • Videos 	Classroom / Lab

Module 5 Title: Introduction to Window Server 2008

Objective of the Module: Enable the students to understand the role of Server Operating System in Networking Environment, various administrator tools and creating Active Directory Infrastructure Tools

Duration: 143 hours **Theory:** 23 hours **Practice:** 120 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Introduction to Windows Server 2008	Install Windows Server 2008 (32/64 Bits)	Demonstrate Installation process of: i. Windows Server 2008 Installation ii. Active Directory iii. ADC / BDC	18 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • MS Server 2008 DVDs 	Class Room / Lab
LU2- Features of Windows Server 2008 Environment	Use DNS & Win Server	Describe the configuration process of: i. DNS Configuration ii. Win-Server Configuration	16 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • MS Server 2008 DVDs 	Class Room / Lab
	Understand and use DHCP	Explain practically the configuration of: i. Assigning IPs to Clients through DHCP	15 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • Demos / Handouts 	
	Understand and use Application of File server	Practically work on: i. File Server (Permissions) ii. Resource Sharing iii. Backup & Restore	17 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • Demos / Handouts 	
	Understand and use Remote Access Server	Demonstrate remote management of: i. Remotely Manage Server / Clients	15 Hrs	<ul style="list-style-type: none"> • Computers • Presentations • Demos / Handouts 	
	Understand and use Print Server	Perform practical to: i. Manage the Printers ii. Assign Print Jobs	16 Hrs	<ul style="list-style-type: none"> • Presentations • Computers • Printers 	
	Understand and use Print Server	Perform practical to: i. Manage the Printers ii. Assign Print Jobs	20 Hrs	<ul style="list-style-type: none"> • Computers 	

	Understand and manage Various Utilities			<ul style="list-style-type: none">• Presentations• Demos / Handouts	
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Module 6 Title: Trouble Shooting of a Network

Objective of the Module: Enable the students to understand the connectivity, Window 7 and Window server 2008 trouble shooting methods

Duration:100 hours **Theory:** Nil hours **Practice:** 100 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1- Connectivity issues	Troubleshoot basic connectivity issues	Illustrate practically to resolve basic issues for: <ol style="list-style-type: none"> i. Verify physical connection between computers ii. Check either computers have been assigned TCP/IP iii. Firewall features are disabled on home network adapters iv. Test connectivity between using the "ping" command 	15 Hrs	<ul style="list-style-type: none"> • Computers • Network Infrastructure • Packet Tracer 	Classroom / Lab
	Troubleshoot file sharing and printer sharing	Explain practically and perform to: <ol style="list-style-type: none"> i. Run Network Setup Wizard to configure network ii. Work on file sharing configuration issues iii. Work on folder sharing iv. Test the connection between computer v. Check the Network Setup Wizard log file for errors 	15 Hrs	<ul style="list-style-type: none"> • Computers • Network Infrastructure • Packet Tracer 	Classroom / Lab

LU2- Window 7 troubleshooting	Troubleshoot malfunctioning in programs	Explain practically and perform to: i. Run programs made for previous versions of Windows from control panel	8 Hrs	<ul style="list-style-type: none"> • Computers • Network Infrastructure • Packet Tracer 	Classroom / Lab
	Troubleshoot Audio Drivers	Explain practically and perform to: i. Check Audio systems	7 Hrs		
	Troubleshoot I/O Devices	Practically explain to: i. Check hardware and devices ii. Check Input devices iii. Check Output devices iv. Check Processing devices v. Check Storage devices vi. Check Printers	12 Hrs		
	Troubleshoot Communication devices	Practically explain to: i. Check network adapters ii. Recovery from backup	8 Hrs		
LU3- Window server 2008 troubleshooting methods	Troubleshoot Server 2008	Explain practically and perform to: i. Check OUs ii. Check Users & Groups iii. Check domain members iv. Check DNS v. Check Active Directory vi. Recovery from backup	35 Hrs	<ul style="list-style-type: none"> • Computers • Network Infrastructure • Packet Tracer 	Classroom / Lab

Assessment

Module 1 Title: Fundamentals of Information Technology

Learning Units	Theory hours	Workplace hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
M1-LU1 Introduction to Information Technology	07 Hrs	Nil	Theoretically explain the concept of: <ul style="list-style-type: none"> • Introduction to Computer • Computer History • Computer generation • Data types, Processing Cycle • Computer in Real life 	Practical Demonstration	
M1-LU2 Introduction to Computer Hardware	14 Hrs	50 Hrs	Demonstrate and install: <ul style="list-style-type: none"> • Input/output Devices (Keyboard, Mouse, Printer, Scanner) • CPU (CU, ALU, Cache) • Memory and its Type (Primary & Secondary) • Portable Devices (Flash Drive, Card Reader, External Drives and other peripherals) Demonstrate and assemble: <ul style="list-style-type: none"> • Motherboard (Data Cables, Sockets, Ports) • Storage devices (Hard Drive, CD/DVD) • Cards (NIC, 	Practical Demonstration	
M1-LU3 Introduction to Computer Software	09 Hrs	24 Hrs	Explain theoretically the concept and use of: <ul style="list-style-type: none"> • Software and its Types • System Software and its uses • Application Software and its uses 	Practical Demonstration	

Module 2 Title: Computer Networking

Learning Units	Theory hours	Workplace hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
<p>M2-LU1 Introduction to Computer Network</p>	<p>21 Hrs</p>	<p>30 Hrs</p>	<p>Briefly describe theoretical concept of:</p> <ul style="list-style-type: none"> • Computer Networks • Advantages / Disadvantages of Networks <p>Explain theoretical concept of:</p> <ul style="list-style-type: none"> • Local Area Network (LAN) • Metropolitan Area Network (MAN) • Wide Area Network (WAN) <p>Explain pros & cons of:</p> <ul style="list-style-type: none"> • Peer-to-Peer Network • Server Base Network • Hybrid Network • Data , Data rate, Bursty data • Baud rate, Peak data rate • Bandwidth <p>Explain the layout of:</p> <ul style="list-style-type: none"> • Bus Topology • Star Topology • Ring Topology • Hybrid Topology 	<p>Practical Demonstration</p>	

M2-LU2 Network fundamentals	11 Hrs	60 Hrs	<p>Demonstrate & examine use of:</p> <ul style="list-style-type: none"> • Node • NIC • Modem • Access point • Hub (active & Passive) • Repeaters • Bridge • Switch • Router <p>Explain the use of:</p> <ul style="list-style-type: none"> • Simplex • Half duplex • Full duplex 	Practical Demonstration	
M2-LU3 Transmission Media	14 Hrs	Nil	<p>Describe physical layout of various cables and their usage:</p> <ul style="list-style-type: none"> • Coaxial cable (10Base2, 10 Base 5, 10Base T, 10BaseFL, 100Base X) • Twisted Pair Cable (Cat 1, Cat 2, Cat 3, Cat 4, Cat 5, Cat 6) • Fiber Optic Cable <p>Describe unguided media and their uses:</p> <ul style="list-style-type: none"> • Terrestrial Microwaves • Radio Waves • Satellite • Wireless Communication 	Practical Demonstration	
M2-LU4 Types of connectors	04 Hrs	18 Hrs	<p>Demonstrate and punching of various types of cables / connectors</p> <ul style="list-style-type: none"> • RJ-45 • RJ-11 • BNC • Kevlar(fiber optic) • DB-9(Serial) • DB-25(Parallel) 	Practical Demonstration	

Module 3 Title: Client End/Window 7

Learning Units	Theory hours	Workplace hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
M3-LU1 Introduction to Operating Systems	03 Hrs	18 Hrs	Demonstrate and install / configure: <ul style="list-style-type: none"> • 32 bits and 64 bits OS • FAT-16/32, NTFS, • Configuration of Disks • Preparing Partitions and Volumes • Configurations of Device Drivers • Install / Upgrade / Troubleshoot Operating System 	Practical Demonstration	
M3-LU2 Features of Windows 7	03 Hrs	18 Hrs	Demonstrate and install / configure: <ul style="list-style-type: none"> • NTFS permissions • Compress and uncompressed data • Data encryption and decryption • Memory quota implementation 	Practical Demonstration	
M3-LU3 Administrator Tools	16 Hrs	144 Hrs	Component Services <ul style="list-style-type: none"> • System Management • User Accounts • Event Viewer • iSCSI Initiator Local Security Policy • Performance Monitor • Task Scheduler • Windows Firewall / Defender • Diagnostic Tools • Network Configuration • Remote Desktop Connections • Optimizer / Compressor Backup and Restore 	Practical Demonstration	

Module 4 Title: Connectivity

Learning Units	Theory Days/hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
M4-LU1 Introduction of OSI Model	10 Hrs	Nil	Application Layer Presentation Layer Session Layer Transport Layer Network Layer Data-link Layer Physical Layer	Practical Demonstration	
M4-LU2 Introduction of TCP/IP Model	08 Hrs	10 Hrs	Explain in detail TCP/IP Model: <ul style="list-style-type: none"> • Explain and demonstrate • Five Layers overview 	Practical Demonstration	
M4-LU3 IP Addressing	10 Hrs	55 Hrs	Demonstrate and Explain IP Addresses <ul style="list-style-type: none"> • IPv4 & IPv6 • IP Classes / Range • Network ID / BID • FLSM Computation • VLSM Computation • Subnet Masking 	Practical Demonstration	

Module 5 Title: Introduction to Window Server 2008

Learning Units	Theory hours	Workplace hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
M5-LU1 Introduction to Windows Server 2008	12 Hrs	30 Hrs	Demonstrate Installation process of: <ul style="list-style-type: none"> • Windows Server 2008 Installation • Active Directory • ADC / BDC 	Practical Demonstration	
M5-LU2 Features of Windows Server 2008 Environment	11 Hrs	90 Hrs	Describe the configuration process of: <ul style="list-style-type: none"> • DNS Configuration • Win-Server Configuration Explain practically the configuration of: <ul style="list-style-type: none"> • Assigning IPs to Clients through DHCP Practically work on: <ul style="list-style-type: none"> • File Server (Permissions) • Resource Sharing • Backup & Restore Demonstrate remote management of: <ul style="list-style-type: none"> • Remotely Manage Server / Clients Perform practical to: <ul style="list-style-type: none"> • Manage the Printers • Assign Print Jobs Perform practical to: <ul style="list-style-type: none"> • Manage the Printers • Assign Print Jobs 	Practical Demonstration	

Module 6 Title: Trouble Shooting of a Network

Learning Units	Theory hours	Workplace hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
M6-LU1 Connectivity issues	Nil	30 Hrs	Illustrate practically to resolve basic issues for: <ul style="list-style-type: none"> • Verify physical connection between computers • Check either computers have been assigned TCP/IP • Firewall features are disabled on home network adapters • Test connectivity between using the "ping" command Explain practically and perform to: <ul style="list-style-type: none"> • Run Network Setup Wizard to configure network • Work on file sharing configuration issues • Work on folder sharing • Test the connection between computer • Check the Network Setup Wizard log file for errors 	Practical Demonstration	
M6-LU2 Window 7 trouble shooting methods	Nil	35 Hrs	Explain practically and perform to: <ul style="list-style-type: none"> • Run programs made for previous versions of Windows from control panel Explain practically and perform to: <ul style="list-style-type: none"> • Check Audio systems Practically explain to: <ul style="list-style-type: none"> • Check hardware and devices • Check Input devices • Check Output devices • Check Processing devices • Check Storage devices 	Practical Demonstration	

			<ul style="list-style-type: none"> • Check Printers <p>Practically explain to:</p> <ul style="list-style-type: none"> • Check network adapters • Recovery from backup 		
M6-LU3 Window server 2008 trouble shooting Methods	Nil	35 Hrs	<p>Explain practically and perform to:</p> <ul style="list-style-type: none"> • Check OUs • Check Users & Groups • Check domain members • Check DNS • Check Active Directory • Recovery from backup 	Practical Demonstration	

Supportive notes

- **Assessment context**
The unit assessment can be taken on the job environment or at lab, may be both. The competency may also check by observing individual is working or as part of team.
- **Critical aspects**
The candidate must be able to vigilant to the dynamic situation and can handling of equipment, comprehend of safety measures related with computer proper maintenance.
- **Assessment condition**
The learner will have access to all tools, equipments material and manual required for this module. Proper time period will be given to candidate.
- **Resources required for assessment**
All network related equipments with necessary accessories including software and hardware tools.

List of Machinery / Equipment

Sr. No	Name of Equipment	Qty
1	Server Machine (64 bit/32 bit)	02
2	Client Station/Desktop Computers	25
3	Network card or wireless card	30
4	Wireless Adapter, Router, Modem	30
5	LCDs	27
6	Hubs	2
7	Repeaters	2
8	Bridges	1
9	Switches	4
10	Routers	1
11	Multimedia	02
12	Printer hp Laser Jet	01
13	Crimping Tools Set	06
14	Cable Tester	06
15	Connectors (BNC, Rj45, Rj11, Kevlar, DB9, DB25)	100 each
16	Cables (Coaxial, UTP, STP (CAT1-6), Fiber Optic	1 Roll each

Minimum Qualification of Teachers / Instructor

The qualification of teachers / instructor of this course should be:-

- MCS/MIT
- Bachelors with computers (Hons)
- DAE (Computer)
- PGD in Computer

Reference books

- Network Essential
- Data Com and Networking by William Stalling
- Window 7 Step by Step
- Window Server 2008 Step by Step

National Curriculum Review Committee Members

The following members participated in this meeting

1. Muhammad Khalid (Associate Professor, GCMS, Peshawar)
2. Engr. Syed Waji-ur-Husnain Sherazi (HOD IT Department GCTR-AJK)
3. Wisal Muhammad (Dy. Director, IT Estb Dept, Peshawar)
4. Faisal Rahim (Lecturer in Comp. Sc GCMS, Peshawar)
5. Muhammad Shahid (Instructor in Staff Training Inst. Quetta)
6. Ghulam Raza Hussain (Sr. Inst VTC Nushki)
7. Arif Jamil Lecturer (GMI Orangi Town Karachi)
8. Mazhar Javed Awan (Lecturer South Asia Univ Lahore)
9. Abdual Hafeez Abbasi (Incharge QA/MIS, Sind TEVETA)
10. Sheikh Humayun Bashir (Sr. Instructor-IT, TEVTA-Punjab)