COURSE NAME: Certificate in Data Communication and Networking (CDCN)

Prerequisite: Before taking this course the user should understand peripheral devices, computer hardware and software, memory, storage devices, some common PC utilities, Internet concepts.

Course Objective: The objective of this course is to enable the student to understand the basic networking concepts, design a local area network and supervise the physical implementation of the same. He should have an understanding of router/switch installation and configuration. He should also perform all administrative operations on a Local Area Network independently, including configuring software in the Windows environment, connecting and configuring peripherals such as printers, scanners etc., granting and restricting access to the network and the internet through a proxy server.

Course Duration: 144 hours

Course Contents:

Sl. No.	Modules	Hours
1	Introduction to Networking	26
2	Windows Server 2012	54
3	Introduction to Linux OS administration and configuration	48
4	Configuration of Routers and Switches using Simulation Tool	16
Total		**144**

Introduction to Networking   **(26 hrs)**
Goals, Applications & Types of Networking
OSI Layers
TCP/IP
Planning the Network
LAN topologies
Cabling considerations
Understanding Internetworking devices – hubs, switches, bridges, routers etc
Structured UTP cabling

Windows Server 2012   **(54 hrs)**
Part 1: (14 hours)
Deploying windows server 2012
Preparing for Installation
Installing windows installing server 2012
Introduction to Administering Accounts and Resources
The Windows Server 2012 Family
Logging on to Windows Server 2012
Installing and Configuring Administrative Tools
Creating User Accounts
Creating Computer Accounts
Creating an Organizational Unit
Managing User and Computer Accounts

Modifying Users and Computer Account Properties
Enabling and Unlocking User and Computer Accounts
Creating a User Account Template
Locating User and Computer Accounts in Active Directory
Saving Queries
Resetting User and Computer Accounts
Moving Domain Objects
Managing Groups
Creating Groups
Managing Group Membership
Strategies for Using Groups
Modifying Groups
Using Default Groups
Best Practices for Managing Groups

Part 2: (8 hours)
Implementing & Managing Printing, File, Mail
Installing and Sharing Printers
Managing Access to Printers Using Shared Printer Permissions
Managing Printer Drivers
Implementing Printer Locations
Changing the Location of the Print Spooler
Setting Printer Priorities
Scheduling Printer Availability
Configuring a Printing Pool
Sharing files, folders etc

Part 3: (12 hours)
Networking windows server 2012
Windows Server 2012 Networking Environment
Setting up and managing a Network
The Architecture of Active Directory
Using Active directories and domains
How Active Directory Works
Examining Active Directory.
The Active Directory Design, Planning, and Implementation Processes.
Managing Virtual Private Networks.
Managing Advanced Network Services
Using Network Monitor.
Managing Routing and Remote Access Services.
Managing the Internet Authentication Service.

Part 4: (8 hours)
Communication and the Internet
Networking with TCP/IP.
Managing the Domain Name System Service.
Managing the Windows Internet Name System Service.
Managing Internet Information Services.
Managing Web Sites.
Managing Routing and Remote Access Services.
Managing the Internet Authentication Service.

Managing the Dynamic Host Configuration Protocol.
Communication and Internet Service

Part 5: (12 hours)
Administrating Windows Server 2012
Managing windows server 2012
Controlling windows server 2012 security
Overview of Security in Windows Server 2012
Monitoring Server Memory
Preparing for Disaster Recovery
Backing Up Data
Using Security Templates to Secure Computers
Testing Computer Security Policy
Configuring Auditing
Managing Security Logs

Introduction to Linux OS administration and configuration   (48 hrs)
Overview of Linux Architecture
Using Linux (commands and utilities)
NFS and NIS installation and configuration
Configuring Networks
Shell programming
User Management
Backup and Recovery
Troubleshooting
Security
Perl scripting

Basic Configuration of Routers and Switches using Simulation Tool (16 hrs)
Introduction to Routers, Switches
Hands on BOSON Router Simulation
Hands on Cisco ConfigMaker tool