Annexure – VIII

Syllabus of CECN

Objective:

The course has been designed to fulfill Networking requirements of Industries. The contents of the course include Basic Computer Network, protocols, Information Security Concepts. This course is Job Oriented course and designed to produce networking professionals capable of implementing, administering, maintaining Networks. This program has been designed to keep in mind that in now day's scenario Diploma/'O'Level/'A' Level / PGDCA/ BCA/B.E./B.Tech/MCA.

Outline of Syllabus for CCCN

Module-1	BASIC COMPUTER NETWORK
Module-2	BASIC I.T. SECURITY CONCEPTS

Detailed Syllabus

Module-1 BASIC COMPUTER NETWORK

1. **Data Communication and Networks :**

   Data Communications, Data Representation, Networks, Physical Structure, Element, Network Relationship, Learning Network Features, Types of Network, Topologies, Elements and Network Operating System.

2. **Networking Protocol & Hardware:**

   Protocols and Standards, Network Model, Layered Tasks, TCP/IP Protocol Suite, TCP/IP and UDP, Addressing, Comparison of OSI & TCP/IP Model. **Network Hardware:** NIC, Repeater, HUB & Concentrators, Switches, Bridge, Router, Gateway etc.

3. **Media Layer & Communication:**

   LAN Characteristics, Guided/ Unguided Transmission Media and Component, MAC Sub layer, Framing, Token Ring, FDDI & Ethernet, Types Of Ethernet, Error detection and correction , Data link layer Protocol , ARP, RARP, Role of Network layer, Network Layer Design Issues, Routing and Algorithms, Network Layer in the Internet, Comparison with other Layer, IP address, Basics of Sub-netting/ Masking and Network Layer Protocol. VLAN Basics, Protocols and Configuration, Router elements and configuration.

4. **Host Layer Data Delivery:**

   Transport Layer and Protocols, TCP /UDP Comparison, Port and Socket Addressing, Flow Control and Buffering, Multiplexing, Error detection and correction, Dialog, Session and Authentication management, Token and Synchronization, Encrypting and compressing data, Application level Protocol, The Domain name system, Electronics Mail, the World Wide Web, FTP, Telnet, HTTP, DHCP etc.

5. **Switching and Making WAN Connection:**

   Switching, Circuit, Massage and Packet Switching, Datagram Network, Virtual-Circuit Networks, Determining WAN need, WAN connection types including POTS, ISDN, DSL/ADSL, Dial-up, Leased line, Wi-Fi, Wi-MAX, Satellite, Cell phones, Broadband over power line, ATM etc.

Module-2 BASIC I.T. SECURITY CONCEPTS

1. **Basic Of Security**
   Information Security :Need for computer security, Hacking, Security mechanisms, Prevention, Policy management, Security threats: Threats, Vulnerabilities, Attacks Snooping, Malicious code, Security of Hard drives, laptops & mobile devices, Cryptography : Symmetric versus asymmetric cryptography, application of cryptography, Identification and Authentication, Network Security Infrastructure, Security Tools and Technologies. Overview of Risk Assessment and Disaster Recovery.

2. **WWW Security**
   Browser Security: Cookies, Java Script, ActiveX, Applets, Buffer overflows, Anonymous surfing, Phishing, HTTP/S, SSL/TLS, E-mail Security: POP3,IMAP, Encrypting and signing messages, S/MIME, PGP, Vulnerabilities Spam, E-mail hoaxes, Wireless Security: Ad-hoc network and sensor networks, WTSL, 802.11 and 802.11x, WEP/WAP.