

CAP660:NETWORK ADMINISTRATION

L:0 T:0 P:5 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: establish understanding of how communication works in data networks and the importance of data communications and the Internet in supporting business communications and daily activities

CO2 :: identify and recognize the different internetworking devices and their functions

CO3 :: devise basic knowledge and understanding about network configurations and initial settings

CO4 :: analyze the services and features of the various layers of data networks

List of Practicals / Experiments:

Internetworking

- Internet working basics
- OSI Layer
- Half Duplex
- Full Duplex
- Ethernet Cabling
- TCP/IP Model: TCP protocols
- IP Addressing
- Private IP Addressing
- NAT

IP Subnetting

- Subnetting Basics
- How to create Subnets
- CIDR Classes Inter-domain Routing
- Classes of Addresses

Intro to CISCO IOS

- Cisco Router User Interface
- Connecting to a Router
- Setup Model
- Command Line Interface
- CLI Prompts
- Setting Passwords
- Banners
- Hostnames
- Router Interfaces
- Viewing and Saving Configurations

IP Routing: Routing Basics

- IP Routing in Larger Networks
- Types of Routing
- Static
- Dynamic and Default Routing
- Administrative Distances

- Routing Loops
- Maximum Hop Count
- Route Poisoning
- Holddowns

RIP and IGRP

- Timers
- Configuring
- Verifying RIP
- Meaning Configuration
- Difference between RIP and IGRP
- Debugging Commands

EIGRP and OSPF

- Protocol
- Features
- Neighbor Discovery
- RTP
- DUA
- Multiple AS
- OSPF: Basics
- Terminology
- SPF Tree Calculation

Layer 2 Switching and VLANs

- Meaning
- Devices
- STP
- LAN Types
- Basic commands
- Vlan Basics
- Membership
- Frame Tagging
- VLAN Trunking Protocol
- 1900 and 2950 Switches

Access Lists

- Intro to Access List
- Standard Access Lis
- Telnet Access
- Extended Access List
- Named Accesslist

Wide Area networking Protocols

- Intro to WAN
- WAN Terms
- Cabling WAN
- Serial Transmission
- Data Terminal Equipment
- Point to Point Protocol

Frame Relay

- Meaning and Importance
- Application demonstration through Simulator

Recommended Readings:

1. CISCO CERTIFIED NETWORK ASSOCIATE STUDY GUIDE by TODD LAMMLE, WILEY
2. CCNA ROUTING AND SWITCHING COMPLETE STUDY GUIDE by TODD LAMMLE, CISCO PRESS