Advance Networking

The objective of the course is to familiarize students with basics and Advance Networking. This course is job oriented course and designed to produce networking professionals capable of implementing, administration, maintaining Networks and overall systems .

OUTLINE OF THE COURSE

S. No.	Topic	Minimum number of Hours
1	Basic Network Concepts	5
2	Networking Device and media connection	5
3	Network Model	8
4	Bridging/Switching and VLAN Concepts	9
5	Cisco Basics, IOS & Network Basic	9
6	Routing Protocol & Network Management	9
7	Fundamental of Network Security	5

LECTURE: 50 hrs
PRACTICAL/TUTORIAL: 50 hrs
Project: 20 hrs
TOTAL: 120 hrs

DETAILED SYLLABUS

1. **Basic Network Concepts**

Introduction to Computer Networks, Element of Network, Type of Network:LAN,MAN,WAN, Network Topologies:Bus,Star,Mesh,Ring,etc ,Data communication & Representation, Network Operating System

2. **Networking Device and media connection**

Common LAN Media:STP,UTP,Coaxial Cable, Optical Fiber, Making and Testing Cable, Straight thru cable, Cross over Cable, Connecter ,Jack, Patch Panels,NIC, Repeater and Hub & its type, Bridges and its Types, Switch and Router

3. **Network Model**

Description of Seven Layers of OSI Model, TCP/IP Model, Comparison of OSI & TCP/IP Model, Physical and Data link Layer, Network and Transport Layer, Presentation and Session Layer, Application Layer

4. **Bridging/Switching and VLAN Concepts**

Switching Services, Configuration of Switches, Store and Forward Techniques, VLAN Basic, VLAN Membership, Routing between VLAN, Configuration of VLAN

5. **Cisco Basics, IOS & Network Basic**

Examine Router elements, Router Boot Sequence, Managing configuration of Cisco Router, Basic Cisco IOS command, Prepare the Initial configuration of Router

6. **Routing Protocol & Network Management**

Describe the three basic method used in Networking, Routing Protocol :RIP,IGRP,EIGRP,OSPF, Routing Protocol and configuration, Configure standard access list to Filter IP traffic, Monitor and verify selected Access list operation on Router, Troubleshoot Network Basic Problem

7. **Fundamental of Network Security**

a) Information Security Fundamental
b) Goals of Security confidentiality
c) Network Security Protocol:SSL,TLS,IPSec,SSH
d) Antivirus, Network scanners,Firewall,Log analysis

REFERENCE BOOKS

1. Data and Computer Communication. " William Stallings", Prentice, Hall of India Private Limited.
2. CCNA Cisco certified Network Associate Study Guide
By Todd Lammle 5th edition (BPB)

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ONLINE RESOUCES

www.*tutorialspoint*.com/*listtutorials*/*networking*

www.comptechdoc.org/independent/**networking**/guide/

www.e-tutes.com

Assignments

1. Define the meaning of the term Computer Network.
2. Define the term peer-to-peer network.
3. Describe the problem with peer-to-peer networks.
4. Define the term network cable.
5. Define the term client/server network.
6. Define the term Local Area Network (LAN). Make sure you describe how large of an area it covers.
7. Define the term Wide Area Network (WAN). Again, make sure you describe how large of an area it covers.
8. What is Guided and Unguided Media ?
9. Define the term Router,Switch,Hub
10. Define IP Address and its class .What is Private and Public IP Address.
11. What is difference between Transmission Control Protocol and User Datagram Protocol?
12. Describe TCP/IP Model and Cisco Model.
13. Basic Configuration of Managed Switch
14. What is DHCP & DNS and how it works on client/Server Architecture.
15. Basic Configuration of Cisco Router
16. Configure different mode on Cisco Router:User,Axuialry,Global Configuration.
17. How to connect different network using Static Routing?
18. Implantation of different routing Protocol like RIP,EIGRP,IGRP.
19. Implantation of OSPF Protocol on Cisco Router.
20. Implementation of Access list Concepts.