

**Course Name : Computer Engineering Group**

**Course Code : CO/CM/IF/CW/CD**

**Semester : Fifth for CO/CM/IF/CW and Sixth for CD**

**Subject Title : Network Management and Administration**

**Subject Code : 17061**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
01	--	04	--	--	50#	--	25@	75

**Rationale:**

The world in the information era has become network centric. It provides comprehensive, self-contained tour of information which deals with data transmission and wiring, network technologies and internetworking protocols.

This subject provides the right balance between theoretical background and practical aspects of network. It is designed for the students to understand basics of computer network, but who want to begin an education about network management and administration.

Network manager is responsible for management of network system, applications in data and telecommunication services whereas network administrator is responsible for operations of key parts of the network.

The contents of the subject cover installation and configuration of network operating system and server which enables the students to manage and administer the network resources.

**Objectives:**

**Intellectual Skills:**

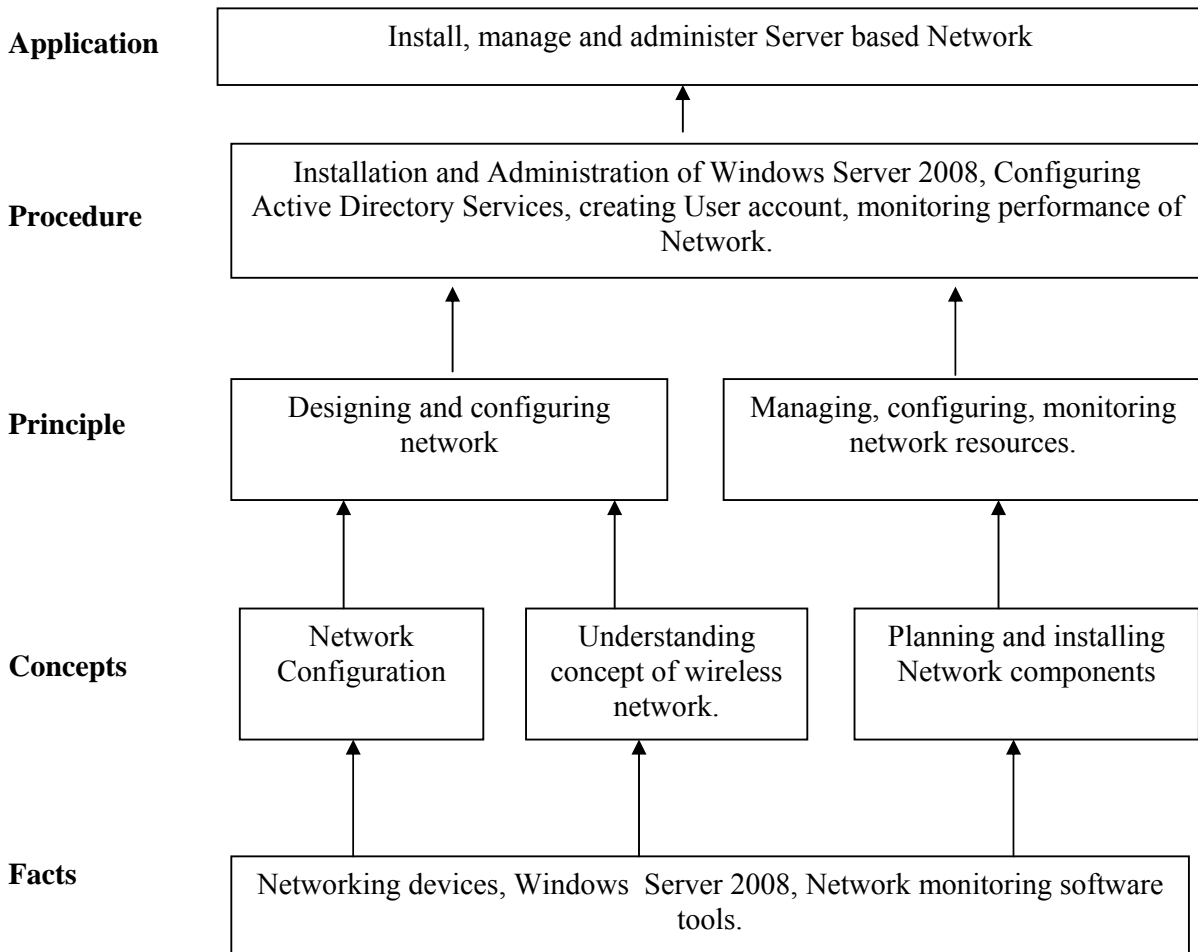
Students will be able to

1. Identify different network components.
2. Install, manage and administer the network.
3. Understand requirements of Windows Server 2008.
4. Use of resource sharing on network.
5. Manage different roles of Servers.

**Motor Skills:**

1. Handling of Computer systems.
2. Handling of different network devices.

**Learning Structure:**



**Contents:**

<b>Chapter</b>	<b>Name of the Topic</b>	<b>Hours</b>
01	<b>Concepts Of Networking</b> <b>Objectives:-</b> <ul style="list-style-type: none"> <li>➤ To understand basic hardware &amp; software requirement for building a network.</li> </ul> <b>1.1</b> Network configuration- Peer-to-Peer Network, Server based Network <ul style="list-style-type: none"> <li>• Network Topologies &amp; Types.</li> <li>• Basic Network Media.</li> </ul> <b>1.2</b> Planning & Installing Network Hardware <ul style="list-style-type: none"> <li>• Types of Server- File, Print, Mail, Web &amp; Database Servers.</li> <li>• Installing a NIC, Twisted Pair Cable, fiber optic Cable, Switches etc.</li> </ul>	02
02	<b>Windows Server 2008</b> <b>Objectives:-</b> <ul style="list-style-type: none"> <li>➤ To understand Network operating System &amp; Concept of Active Directory Services.</li> </ul> <b>2.1</b> Installing & Configuring Windows Server <ul style="list-style-type: none"> <li>• Checking System Requirements.</li> <li>• Choosing a File System.</li> <li>• Planning Partitions.</li> <li>• Deciding TCP/IP Configuration.</li> <li>• Choosing Workgroups or domains.</li> </ul> <b>2.2</b> Dealing with Directory Services <ul style="list-style-type: none"> <li>• Define directory services, (NDS), Windows NT Domains, Microsoft Active Directory Service (ADS), X.500 Directory Access Protocol (DAP), and LDAP.</li> <li>• Understanding ADS Structure, Objects, Domains, Organizational Units (OU), Trees, Forests.</li> </ul>	04
03	<b>Managing User Accounts &amp; Resource Services</b> <b>Objectives:-</b> <ul style="list-style-type: none"> <li>➤ Managing user accounts, shared folders and network printers.</li> </ul> <b>3.1</b> Understanding user accounts <ul style="list-style-type: none"> <li>• Creating a new user.</li> <li>• Setting user properties.</li> <li>• Deleting or disabling user accounts.</li> <li>• Working with groups:- Group types, Group Scope, Creating a Group &amp; adding member to a Group.</li> <li>• Understanding Group Policies.</li> </ul> <b>3.2</b> Managing Resource Services <b>3.2.1</b> Managing File Server: <ul style="list-style-type: none"> <li>• Understanding permissions, sharing files &amp; folders, configuring File Server.</li> </ul> <b>3.2.2</b> Managing Print server: <ul style="list-style-type: none"> <li>• Network Printing Process.</li> <li>• Managing Shared Printer.</li> <li>• Adjustment Print Server settings.</li> </ul>	04

04	<p><b>Configuring Dhcp And Dns</b>  <b>Objectives:-</b></p> <ul style="list-style-type: none"> <li>➤ To understand configuration of DHCP and DNS.</li> </ul> <p><b>4.1 DHCP (Dynamic Host Configuration Protocol)</b></p> <ul style="list-style-type: none"> <li>• Understanding DHCP- IP Address Assignment, DHCP Architecture.</li> <li>• Working with DHCP Server – Installing, configuring and managing DHCP Server.</li> </ul> <p><b>4.2 DNS (Domain Name System) –</b></p> <ul style="list-style-type: none"> <li>• Understanding DNS Names- Domain, domain-naming, top level domains, sub-domains, Name Resolution.</li> <li>• Managing DNS server and DNS Clients</li> </ul>	03
05	<p><b>Network Administration And Security</b>  <b>Objectives:-</b></p> <ul style="list-style-type: none"> <li>➤ To understand network administration and maintaining security.</li> </ul> <p>5.1 Role of Network Administrator.  5.2 Use of Software tools for monitoring &amp; administration of Network.  5.3 Securing user accounts.  5.4 Securing the Network using Firewall, Disabling unnecessary Services.  5.5 Role of SNMP in Network Management.  5.6 Working with Windows-2008 backup software.</p>	03
<b>Total</b>		<b>16</b>

**List of Practicals:**

Sr No.	Name of Practical
1	Understand the networking in the laboratory and determination of various networking hardware and software components with their technical specification.
2	Install and Configure Network Interface card and configure TCP/IP in the laboratory.
3	Install Windows server 2008
4	Set up Domain Name System (DNS) Server and Install Active Directory Server on windows server 2008.
5	Creating and Managing user accounts in windows server 2008
6	Create folders and manage folders in windows server 2008
7	Configure and manage Print Services
8	Install and configure DHCP Server
9	Tuning and monitoring network system
10	Working with Windows Server 2008 Back up utilities and services.
11	Study of wireless network
12	Study of Cloud Computing as Network Infrastructure Component

**Learning Resources:****1. Books:**

<b>Sr. No.</b>	<b>Author</b>	<b>Title</b>	<b>Publisher</b>
1.	Mark Minasi	Mastering Windows Server 2008	Wiley India
2.	Hassell	Windows Server 2008 : definitive guide	Oreilly
3.	Doug Lowe	Networking for Dummies	Wiley India
4.	Richard Burke	Network Management Concepts and practice.	Pearson
5.	Microsoft Press	MCSE Training Kit	Tata Mc graw Hill
6.	George Reese	Cloud Application architectures	Oreilly

**2. Web References:**

1. [www.snmp.com](http://www.snmp.com)
2. [www.triti.com](http://www.triti.com)
3. [www.cisco.com](http://www.cisco.com)