



C.U.SHAH UNIVERSITY – Wadhwan City

FACULTY OF: -Technology and Engineering (Diploma Engineering)

DEPARTMENT OF: -Computer Engineering

SEMESTER: - V **CODE:** - 2TE05NMA1

NAME– Network Management and Administration.

Teaching & Evaluation Scheme:-

| Subject Code | Name of the Subject | Teaching Scheme | | | | Evaluation Scheme | | | | | | | |
|------------------|---------------------------------------|-----------------|----|----|-------|-------------------|-------|-----------------|-------|-------------------|----|------------|-------|
| | | Th | Tu | Pr | Total | Theory | | | | Practical (Marks) | | | Total |
| | | | | | | Sessional Exam | | University Exam | | Internal | | University | |
| | | | | | | Marks | Hours | Marks | Hours | Pr/Viva | TW | Pr | |
| <u>2TE05NMA1</u> | Network Management and Administration | 03 | 00 | 04 | 07 | 30 | 1.5 | 70 | 03 | | 20 | 30 | 150 |

Objectives: - To access remote programs, data, and hardware resources lying either on the same organization's computers or from other enterprises or public sources for resource sharing, e-commerce, use of social network etc, connecting the IT resources is the prime requirement of today. The computer networks provide communication possible. In this scenario the management and administration of network in effective manner becomes an important aspect. The course introduces students to the fundamentals of network management, primarily for TCP/IP networks.

Prerequisites: - Basic Knowledge of Computer Network and Network Hardware.

Course Outlines:-

| Sr. No. | Course Contents | Hours |
|---------|--|-------|
| 1 | Exploring Directory Services Directory Services, Definition, Novelle Directory, Windows Domain, Active Directory, X500 Directory Access Protocol, Lightweight Directory Access Protocol, Forest, Trees, Root and Leaves, Active Directory Architecture(Object Type, Object Naming, Canonical Names, LDAP Notation, User Principle Names, Domain, Trees and Forests). | 04 |
| 2 | Remote Access Remote Network Access, Need of Remote Network Access, PSTN, ISDN, DSL, CATV, Virtual Private Network, VPN Protocol, Types of VPN, VPN Clients, SSL VPNs. | 04 |
| 3 | Network Protocols And Services Dynamic Host Control Protocol, DHCP Origins, Reverse Address Resolution Protocol, The Bootstrap Protocol, DHCP Objectives, IP Address Assignments, DHCP Architecture. Domain Name Systems, DNS Objectives, Domain Naming, Top Level | 10 |

| | | |
|----------|--|-----------|
| | Domains, Second Level Domains, Sub-Domains, DNS Functions, Resource Records, DNS Name Resolution, Resolves, DNS Requests, Root Name Servers, Resolving a Domain Name, DNS Name Registration. | |
| 4 | Network Planning and Implementation Designing a Network, Accessing Network Needs, Applications, Users, Network Services, Security and Safety, Growth and Capacity Planning, Meeting Network Needs, Choosing Network Structure, Choosing Servers, Installing and Configuring Windows Server, Creating Windows Server boot disk, Creating Domain Controller, Adding the DHCP WINS roles, Adding file Server and Print Server, Adding Web based Administration , Configuration and IOS Management Commands. | 10 |
| 5 | Network Configuration Working With User Accounts, Adding a User, Modifying User Account, Delete a User Account, Working with Windows Security Groups, Creating Group, Maintaining Group Membership, Working with Shares, Understanding Share Security, Creating Shares, Mapping Drives, | 08 |
| 6 | Troubleshooting of Network Understanding the Problems, Troubleshooting, Segmenting the Problem and Isolating the Problem, Setting Priorities, Troubleshooting Tools, Hardware Tools, Software Tools, Monitoring and Troubleshooting Tools, Internal Security, Account Security, File and Directory permissions, practice and user education. | 06 |

List of Experiments:-

- Troubleshooting of Computer.
- Execute Basic TCP/IP utilities and commands. (eg: ping, ipconfig, tracert, arp, tc, pdump, who is, host, netsat, nslookup, ftp, telnet etc.).
- Configure VPN components and Set-up VPN.
- Creating Windows Server Boot Disk.
- Installing Windows Server.
- Installing and configuring Linux Server.
- Installing Active Directory & Creating AD Objects.
- Configure Print Server & Backup Server.
- Create Domain Controller.
- Setting up and Configuring Local Print Device and Network Print Device
- Installing LINUX Operating Systems.
- Create new Users & assign privileges/ Permission
- Modify/ Delete/Deactivate Users and groups
- Manage Microsoft Certificate Services.
- To Study about DNS Registration.

Learning Outcomes:-

- Set up and use Virtual Private Network.
- Install and Configure Network Operating Systems.
- Troubleshoot Network.
- Installing Windows Servers.
- Network Protocols and Services.

Books Recommended:-

- The Complete Reference Networking **By: Craig Zacker** Tata Mc Graw Hill.
- Networking A Beginner's Guide **By: Bruce Hallberg** Tata Mc Graw Hill.

- The Real World Network Troubleshooting Manual **By: Alan Sugano** .

E- Reference:-

- <https://technet.microsoft.com/en-us/library/dd578336%28v=ws.10%29.aspx>
- <https://msdn.microsoft.com/en-us/library/aa362244%28v=vs.85%29.aspx>
- <http://www.webopedia.com/TERM/V/VPN.html>
- <http://www.webopedia.com/TERM/P/PSTN.html>
- <http://searchnetworking.techtarget.com/definition/PSTN>
- <http://www.wikihow.com/Install-Linux-Mint>
- <http://www.tldp.org/HOWTO/LDAP-HOWTO/whatisldap.html>
- http://en.wikipedia.org/wiki/Lightweight_Directory_Access_Protocol