

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	Computer Engineering			
Semester	V				Version	1.0.0.0			
Effective from Academic Year				2020-21		Effective for the batch Admitted in		JULY 2018	
Subject code	1CE2505		Subject Name		Network Management & Administration				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	60	40	100

Pre-requisites:
Fundamental knowledge of Computer Network

Course Learning Outcomes:
The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:
<ul style="list-style-type: none"> T1 Analyse the requirements for a given organizational structure and select the most appropriate networking architecture and technologies. T2 Install, configure and manage enterprise systems/networks, including hardware/software. T3 Implement and configure active directory. T4 Create user/group accounts and configure server roles. T5 Administer permissions for users, files and network resources. T6 Use group policies to configure and secure the network. T7 Maintain and troubleshoot enterprise networks.
The practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate course learning outcomes.

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
Unit – I Exploring Directory Services and Remote Access	1.1. Directory Services: Define Directory Service, Definition of Novell Directory, Windows Domain, MS Active Directory, X500 Directory Access Protocol, Lightweight Directory Access Protocol 1.2. Forests, Trees, Roots and Leaves, Domain 1.3. Active Directory Architecture: Object Types, Object Naming: Canonical Names, DAP Notation, Globally unique identifiers, User Principal Names 1.4. Remote Network Access: Need of Remote Network Access, PSTN, ISDN, DSL, CATV, 1.5. Virtual Private Network: VPN Protocols, Types of VPN, VPN Clients VPNS,	1.1. Describe Directory Service. 1.2. Describe different Directories Access Protocols. 1.3. Describe Active Directory Architecture. 1.4. Set-up Remote Network Access. 1.5. Describe PSTN, ISDN, DSL, CATV.	12	8

		1.6. List VPN Protocols.		
Unit– II Network Protocols and Services	<p>2.1 DHCP: DHCP Origins, Address Resolution Protocol (ARP), Reverse Address Resolution Protocol (RARP), The Bootstrap Protocol (BOOTP), DHCP Objectives Address assignments, DHCP Architecture,</p> <p>2.1 Introduction to Domain Name Systems (DNS): DNS Objectives, Domain Naming, Top Level Domains, Second Level Domains, Sub-domains, DNS Functions, Resource Records, DNS Name Resolution, Resolvers, DNS Requests, Root Name Servers, Resolving a Domain Name, DNS Name Registration,</p> <p>2.2 Network Printing Concepts: Locally Connected Print Devices, setting up local Print Devices, Shared Print Devices, Sharing Locally Attached Print Devices, Describe Windows Network, Printing and Add print Wizard</p>	<p>2.1 Describe ARP, RARP, BOOTP, DHCP.</p> <p>2.2 Describe DHCP Architecture.</p> <p>2.3 Differentiate various addressing schemes.</p> <p>2.4 List DNS Objectives.</p> <p>2.5 Draw DNS Hierarchy.</p> <p>2.6 Describe Name Resolutions.</p> <p>2.7 List Resolvers.</p> <p>2.8 Describe DNS registration process.</p> <p>2.9 Set-up Local and network Print Devices.</p>	12	10
Unit– III Network Planning and Implementation	<p>3.1 Designing Network: Accessing Network Needs, Applications, Users, Network Services, Security and Safety, Growth and Capacity Planning</p> <p>3.2 Meeting Network Needs: Choosing Network Type, Choosing Network Structure, Choosing Servers.</p> <p>3.3 Installing and Configuring Windows Server: Preparing for Installation, installing windows server, Configuring server/ client.</p> <p>3.4 Setting windows server: Creating Domain Controller, Adding the DHCP and WINS roles, adding file server and print server, Adding IIS</p>	<p>3.1 Design and configure a small Network.</p> <p>3.2 List out Network Applications.</p> <p>3.3 List out Network Applications.</p> <p>3.4 Install and Configure Windows Server.</p> <p>3.5 Create Domain controller.</p>	12	10
Unit– IV Network Configuration	<p>4.1 Working with User Accounts: Adding a User, Modifying User Account, Deleting or Disabling a User Account.</p> <p>4.2 Working with Windows Security Groups: Creating Group, Maintaining Group Membership.</p>	<p>4.1 Manage User account Security Group.</p> <p>4.2 Administer shared resources.</p>	12	8

	<p>4.3 Working with Shares: Understanding Share Security, Cresting Shares, Mapping Drives</p> <p>4.4 Administering Printer Shares: Setting up Network Printer</p> <p>4.5 Working with Windows Backup: Types of Back up, Using Windows Servers Backup Software</p>	4.3 Configure back-up and print Server.		
<p>UNIT V Troubleshooting of Networking</p>	<p>5.1 Understanding the Problem: Troubleshooting, Segmenting the Problem, Isolating the Problem, Setting Priorities.</p> <p>5.2 Troubleshooting Tools: Hardware Tool, Software Tools, Monitoring and Troubleshooting Tool</p> <p>5.3 Internal Security: Account Security, File and Directory permissions, Practices and user education</p>	<p>5.1 Troubleshoot Network faults.</p> <p>5.2 Set Priorities.</p> <p>5.3 Work with network troubleshooting tools.</p> <p>5.4 Assign files permissions to users/groups.</p>	12	9

List of Practical		
No.	Unit	Name of Practical
1	1	Execute Basic TCP/IP utilities and commands.
2	1,3	Design and implement small network using actual physical
3	2	Setting up and Configuring Local Print Device and Network Print Device
4	3	Creating Windows Server Boot Disk.
5	3	Installing Windows Server
6	-	Installing and configuring Linux Server
7	3	Installing Active Directory & Creating AD Objects
8	3	Create Domain Controller
9	2	Create DHCP Server.
10	4	Create new Users & assign privileges/ Permission.
12	4	Modify/ Delete/Deactivate Users and groups
13	4	Configure Print Server & Backup Server
14	5	Identify, Segment Network Faults and troubleshoot
15	4	Manage Desktop Configuration using Group Policy

List of Instruments / Equipment / Trainer Board	
1	Server, Client, Network Switch

List of Textbooks			
No	Title of Text Books	Authors	Publication
1	The Complete Reference Networking	Craig Zacker	Tata McGraw Hil

List of Reference Books

No	Title of Reference Books	Authors	Publication
1	The Real-World Network Troubleshooting Manual	Networking A Beginner's Guide	Firewall Media
2	MCSE Training Kit Networking Essential Plus	Microsoft Press	MicroSoft Press