

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	Computer Engineering			
Semester	IV				Version	1.0.0.0			
Effective from Academic Year	2018-19				Effective for the batch Admitted in	June 2018			
Subject code	1CE2402		Subject Name	Computer Network					
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	30	20	50

Pre-requisites:
Basic knowledge of Computer

Course Learning Outcomes:
<p>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:</p> <p>T1. understand basic computer network technology. T2. To understand OSI ref model. T3. Understand TCP/IP networking, addressing scheme and subnetting. T4. Understand the use and application of interconnecting devices. T5. Understand different Guided and Unguided transmission media. T6. Understand the network troubleshooting procedure and perform troubleshooting commands.</p> <p>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.</p>

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
UNIT 1 Networks Basics	1.1. Concept of network 1.2. Models of network computing 1.3. Networking models, Peer-to-peer Network 1.4. Server Client Network, Network Services 1.5. Concept of switching, Switching Techniques	1.1. List the applications of Computer Networks, topology 1.2. Explain use of various types of servers and switching techniques	8	7
UNIT 2 Model	2.1. OSI Reference Model 2.2. Function of various layers in OSI Reference Model 2.3. TCP/IP Model 2.4. Comparison between OSI and TCP/IP model	2.1. State OSI layer and functions of it	10	7

UNIT 3 Introduction to TCP/IP	3.1. Concept of physical and logical addressing 3.2. IPV4 addressing- Address space, Notations, Classful Addressing, Classless Addressing 3.3. Network Address Translation. 3.4. Different classes of IP addressing, special IP address 3.5. Sub netting and super netting, Loop back concept 3.6. IPV4 and IPV6 packet Format	3.1. Describe different addressing modes, 3.2. state and learn different types of addressing 3.3. implementing networking and subnetting 3.4. discuss ipv4 and ipv6 packet format	14	7
UNIT 4 Types of transmission media	4.1. Guided Media, Unguided Media, Transmission 4.2. Impairments, Performance, Wavelength ,Media Comparison	4.1. State guided and unguided media and implementing it for networking needs	10	13
UNIT 5 Connectivity devices	5.1. NICs, Hubs, bridges, Repeaters, switches, Multiplexers, Modems, Routers, Gateways.	5.1. Use of different network devices	10	5
UNIT 6 Network Trouble Shooting Techniques	6.1. Trouble Shooting process 6.2. Trouble Shooting Tools: PING, IPCONFIG, IFCONFIG, NETSTAT, TRACEROUT, Wire shark	6.1. Understand and troubleshoot different networking problems	8	6

List of Practical		
No.	Unit	Name of Practical
1	1	Study of Computer Network Applications.
2	2	Study of OSI Model
3	2	Study of TCP/IP model.
4	2	Practical to set TCP/IP setting in Windows and Linux.
5	3	Study of Class full and Classless IP Address Scheme.
6	3	Study of Subletting.
7	3	Study of IPV4 protocol.
8	3	Study of IPV6 protocol.
9	4	To demonstrate the use of of NIC.
10	5	To create LAN with Interconnecting Devices.
11	6	Study and practice of Different Command.
12	6	To create a small LAN.

List of Instruments / Equipment / Trainer Board	
1	Computer System with latest configuration and memory
2	Network Cable Cat 5/Cat 6,switch,routers
3	UTP Cable Tester

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Computer Networks	Andrew S Tannebaum	Pearson, 2012
2	Computer Networks	Bhushan Trivedi	Oxford University Press, 2013
3	Data & Computer Communication	Williams Stallings	Prentice Hall of India
4	Networks for Computer Scientists and Engineers	Youlu Zheng & Shakil Akhtar	Oxford University Press, 2012

Link of Learning Web Resource	
1	http://nptel.iitm.ac.in/courses.php?disciplineId=106