

GOVT. POLYTECHNIC, HAMIRPUR (H.P.)
Lesson Planning

Branch: Computer Engineering

Semester: 3rd

Subject: Data Communication & Computer Networks

Session: August 2020

Course Code: I6TPC201

Laboratory: YES

Teacher: VIKAS SONI

Sr. No.	No of Lectures	Chapter/Unit Description	Detailed contents	Reference Resources	Remarks
1	14 Hrs	Overview of Data Communication	Data Communication, Data Communication Characteristics - Delivery, Accuracy, Timeliness, Jitter; Components of Communication System, Data Flow - Simplex, Half-Duplex, Full-Duplex; Analog and Digital Signals, Peer-to-Peer and Client-Server Networks, Characteristics of Analog Signals - Frequency, Amplitude, Wavelength; Composite Signal, Phase, Bandwidth; Low Pass and Band Pass Channels, Baseband and Broadband Transmission, Data Rate Limit	R1, R2	
2	14 Hrs	Computer Networks	Objectives of Computer Networks, Applications, Network Protocols, Packet Switching, Circuit Switching, Network Topologies, Types of Computer Networks - PAN, LAN, MAN, WAN, Internetworks, Internet - History, Internet Infrastructure, DNS, Internet Routing Hierarchy	R1, R2	
3	14 Hrs	ISO OSI Reference Model	Advantages of Layered Network Architecture, ISO OSI Reference Model, Principles of OSI Reference Model, Functions of OSI Layers, Overview of Basic Protocols at Physical, Data Link, Network and Transport Layers	R1, R2	
4	12 Hrs	Transmission Media and Networking Devices	Wired Media - Coaxial, UTP, STP, Optical Fibre Cables; Wireless Media - Infrared, Radio Waves, Microwaves; Terrestrial and Satellite Wireless Communication; Transmission Impairments, Networking Devices - Repeater, Hub, Bridge, Switch, Router, Gateway, Modem	R1, R2	
5	10 Hrs	TCP/IP Protocol Suite	Layers in TCP/IP Protocol Suite, TCP/IP Protocol Data Units, IPv4 and IPv6 addresses, IPv4 CIDR Notation, Netmasks and Subnets, IPv4 Address Classes and Reserved Ranges, TCP and UDP, Ports, Well-known Ports, Telnet, FTP, SNMP, DHCP and DNS, Overview of Routing - Flooding, Distance Vector, Link State	R1, R2	


Reference Books:

- R1. Computer Networks, 4th Edition , Andrew S. Tanenbaum, PHI
- R2. Data Communication and Computer Networks by Behrouz Forouzan.

COURSE OUTCOMES:

After completing this course students will be able to:

- CO-1. Understand the terminology used in the domain of computer networks.
- CO-2. Explain the underlying principles of computer networks.
- CO-3. Identify and use common networking devices and cables.
- CO-4. Understand the working of TCP/IP as a case study.


01.08.2024
Signature of Teacher


Signature of HOD