Community College of Skill Development

Lesson Plan: Computer Networks (WDD-203-V)

Program: B.Voc. Web Development **Semester: III** **Credits: 03**

Course Objectives:

This course aims to provide a comprehensive understanding of networking fundamentals, LAN components and protocols, network addressing, and the World Wide Web architecture.

Course Outcomes: After the successful completion of the course, students will be able to:

CO1: Analyze networking concepts and topologies to identify appropriate hardware and software components for designing efficient computer networks

CO2: Evaluate LAN components, protocols, and communication standards to configure and troubleshoot local area networks effectively.

CO3: Design network addressing schemes using TCP/IP protocols, including subnetting and IPv6, to optimize resource utilization and ensure seamless communication.

CO4: Create web documents and implement HTTP protocols to enhance the performance and accessibility of dynamic web applications effectively.

Equipment required in Classroom

i. LCD/Projector
ii. Whiteboard/ Black Marker

Assessment Scheme

S.No.	Criteria	Marks
1	End Term Examination	75
2	Internal Evaluation Scheme	25
2a	Class Tests	15
2a (i)	Class Test-I	7.5
2a (ii)	Class Test-II	7.5
2(b)	Teacher Assessment (Continuous Evaluation)	10
2b (i)	Attendance	5
2b (ii)	Assignment / Presentation	5

Lesson Plan

Lecture No.	Content to be Covered	Pedagogy	Date of Implementation	Course Outcomes Covered	Faculty Sign
04 Aug 2025 (Monday)					
1	Overview of Networking: Definition, scope, and importance	Lecture	06 Aug 2025 (Wednesday)	CO1	
2	Need for Networking; Hardware and Software components	Lecture	07 Aug 2025 (Thursday)	CO1	
3	Network Communication Standards and protocols	Lecture and case examples	11 Aug 2025 (Monday)	CO1	
4	OSI Reference Model: layers, functions, and data flow	Diagram Explanation	13 Aug 2025 (Wednesday)	CO1	
5	TCP/IP Model – comparison with OSI	Comparative Lecture	14 Aug 2025 (Thursday)	CO1	
6	Overview of Network Topologies, Basic Topologies: bus, ring	Visual Explanation	18 Aug 2025 (Monday)	CO1	
7	Topologies: star, mesh and hybrid	Lecture and Group Activity	20 Aug 2025 (Wednesday)	CO1	
21 Aug 2025 (Thursday)					
8	LAN Cables and Transmission Media Overview	Lecture with examples	25 Aug 2025 (Monday)	CO2	
9	Co-axial, Twisted Pair, and Optical Fibre cables	Lecture and Comparison	27 Aug 2025 (Wednesday)	CO2	
10	LAN devices: repeaters, hubs	Lecture and demo	28 Aug 2025 (Thursday)	CO2	
11	LAN devices: switches, NIC, WLANs	Lecture	01 Sep 2025 (Monday)	CO2	
12	Lower Layer Protocols: ARCnet and Ethernet Basics	Lecture	03 Sep 2025 (Wednesday)	CO2	
13	Ethernet Communication and Frame Structure	Lecture	04 Sep 2025 (Thursday)	CO2	
14	Fast Ethernet and Gigabit Ethernet	Lecture and Case	08 Sep 2025 (Monday)	CO2	
15	Token Ring – Concept and Token Ring Frame Format	Illustration and quiz	10 Sep 2025 (Wednesday)	CO2	
16	Fault Management, Tolerance, and FDDI	Lecture	11 Sep 2025 (Thursday)	CO2	
17	Middle Layer Protocols: TCP/IP (Structure and Operation)	Lecture	15 Sep 2025 (Monday)	CO2	

18	Higher Layer Protocols: HTTP, FTP, SMTP, IMAP	Lecture	17 Sep 2025 (Wednesday)	CO2	
18 Sep 2025 (Thursday)					
19	Introduction to Network Addressing – Purpose and Concepts	Lecture	22 Sep 2025 (Monday)	CO3	
20	TCP/IP Addressing Scheme Overview	Diagram explanation	24 Sep 2025 (Wednesday)	CO3	
21	Components of IP Addressing: Network ID and Host ID	Lecture	25 Sep 2025 (Thursday)	CO3	
22	IP Address Classes and their Limitations	lecture and Q&A	29 Sep 2025 (Monday)	CO3	
23	Concept of Subnetting – Why and When it's needed	Lecture	01 Oct 2025 (Wednesday)	CO3	
24	Creating Subnets in Networks	Lecture	02 Oct 2025 (Thursday)	CO3	
25	Communication Across Subnets	Lecture	06 Oct 2025 (Monday)	CO3	
26	Subnetting Considerations and Limitations	Lecture	08 Oct 2025 (Wednesday)	CO3	
27	Introduction to IPv6 – Features, Address Structure, and Advantages	Lecture and Comparison	09 Oct 2025 (Thursday)	CO3	
13 Oct 2025 (Monday)					
28	Introduction to the World Wide Web – History and Evolution	Lecture	15 Oct 2025 (Wednesday)	CO4	
29	Architectural Overview of WWW	Diagram Explanation	16 Oct 2025 (Thursday)	CO4	
30	Components of the Web – Clients, Servers, and URLs	Lecture		CO4	
31	Static Web Documents – Creation and Characteristics	Lecture and Practical		CO4	
32	Dynamic Web Documents – Concepts and Examples	Lecture and Practical		CO4	
33	Client-Server Communication Model	Board & PPT		CO4	
34	Introduction to HTTP – Role and Basics	Lecture and illustration		CO4	
35	HTTP Request and Response Cycle	Lecture		CO4	
36	HTTP Methods and Status Codes	Lecture		CO4	
37	Performance Issues and Caching Mechanisms	Lecture		CO4	
38	Web Performance Enhancements Techniques	Lecture		CO4	

39	Emerging Web Technologies – Web 2.0, APIs, and REST	Lecture		CO4	
40	Revision and Case Study: End-to-End Web Communication Flow	Lecture		CO4	

Text Books

1. Forouzan, Behrouz A. Data Communications and Networking. McGraw Hill Education, 5th Edition, 2021.
2. Tanenbaum, Andrew S. and Wetherall, David J. Computer Networks. Pearson Education, 6th Edition, 2021.

Reference Books

1. Kurose, James F. and Ross, Keith W. Computer Networking: A Top-Down Approach. Pearson Education, 8th Edition, 2022.
2. Comer, Douglas E. Internetworking with TCP/IP, Vol. 1: Principles, Protocols, and Architecture. Pearson Education, 6th Edition, 2020.