Lesson Plan

# Name of the Faculty: Dr. Ravinder Kumar, Lecturer

**Department: Computer Engineering**

**Semester: 5th**

**Subject: Computer Networks**

**Lesson Plan Duration:** 15 weeks (from 04 Aug 2025 to 01Dec 2025)

# \*\*Work load (Lecture / Practical) per week (in hours): Lectures-03, practical -03

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| **Week** | **Theory** | | **Practical** |
| **Lect. day** | **Topic(Including assignment / test)** | **Practical**  **Topic** |
| 1st | 1st | Networks Basics:Concept of network Models of network computing | * Recognize the physical topology of a network * Recognize the cabling (coaxial, OFC, UTP, STP) of a network * Practical Note Book Check |
| 2nd | Network Models  Peer-to –peer Network Server Client Network |
| 3rd | Network Services, topologies, Revision and Note Book Check |
| 2nd | 1st | Concept of switching, Switching Techniques | * Recognition and use of various types of * connectors RJ-45, RJ-11 * Recognition and use of various types of connectors BNC and SCST |
| 2nd | OSI Reference Model |
| 3rd | Function of various layers in OSI Reference Model, Revision and Note Book Check |
| 3rd | 1st | TCP/IP model | * Recognition of network devices like Switches, Hub of access points for Wi-Fi * Recognition of network devices like Routers of access points for Wi-Fi |
| 2nd | Function of various layers in TCP/IP Reference Model |
| 3rd | Comparison between OSI and TCP/IP model , Revision and Note Book Check |
| 4th | 1st | Concept of logical and physical addressing | * Practical Note Book Check * Making of cross cable * Making of straight cable |
| 2nd | IPV4 addressers- Address space, Notations |
| 3rd | Classful Addressing, Classless Addressing, Network Address Translation |
| 5th | 1st | Different classes of IP addressing ,special IP address | * Install a network interface card in a workstation. * Configure a network interface card in a workstation. |
| 2nd | Sub netting |
| 3rd | super netting, Loop back concept ,Revision and Note Book Check |
| 6th | 1st | IPV4 packet Format | * Identify the IP address of a workstation and the class of the address * Configure the IP Address on a workstation |
| 2nd | IPV6 packet Format |
| 3rd | Ethernet Specification |

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| 7th | 1st | Ethernet Standardization | | | * Practical Note Book Check * Managing user accounts in windows | |
| 2nd | 10 Mbps (Traditional Ethernet) | | |
| 3rd | 10 Mbps (Fast Ethernet) | Ethernet), 1000 Mbps | (Gigabit |
| 8th | 1st | Network connectivity Devices | | | * Managing user accounts in LINUX | |
| 2nd | NICs , Revision and Note Book Check | | |
| 3rd | Repeaters, switches | | |
| 9th | 1st | Hubs, switch | | | * Sharing of network. | Hardware resources in the |
| 2nd | Modems, Routers | | |
| 3rd | Gateways, Revision and Note Book Check | | |
| 10th | 1st | Configuration of routers and gateways | | | * Use of Netstat * Use of Netstat and its options. | |
| 2nd | Network Security Principles, | | |
| 3rd | Cryptography, using secure protocols | | |
| 11th | 1st | Revision and Note Book Check | | | * Revision * Connectivity troubleshooting using PING | |
| 2nd | Introduction to Techniques | Network Trouble | Shooting |
| 3rd | Trouble Shooting process | | |
| 12th | 1st | Trouble Shooting Tools: PING | | | * Connectivity troubleshooting using IPCONFIG * Connectivity troubleshooting using IFCONFIG | |
| 2nd | IPCONFIG, IFCONFIG, NETSTAT | | |
| 3rd | TRACEROOT, Wireshark , Revision and Note Book Check | | |
| 13th | 1st | Nmap, TCPDUMP, ROUTEPRINT | | | * Revision * Installation System(NOS) | of Network Operating |
| 2nd | DHCP Server | | |
| 3rd | Workgroup Networking | | |
| 14th | 1st | Domain Networking | | | * Installation of Network Operating System(NOS) | |
| 2nd | Introduction to WLAN | | |
| 3rd | 802.11- Architecture, Revision and Note Book Check | | |
| 15th | 1st | WiMax, Li-Fi | | | * Visit to nearby industry for latest networking   techniques   * Revision | |
| 2nd | Wireless security | | |
| 3rd | Bluetooth- Architecture and comparison with Wifi | | |

RECOMMENDED BOOKS

1. Computer Networks by Tanenbaum, Prentice Hall of India, New Delhi.

2. Data Communications and Networking by Forouzan, (Edition 2nd and 4th), Tata McGraw Hill Education Pvt. Ltd, New Delhi.

RECOMMENDED WEBSITES

1. http://swayam.gov.in