**Government Polytechnic Morni**

**Lesson Plan**

Name of the Faculty: Narender Sharma

# Department: Computer Engineering

**Semester: 5th**

**Subject: Computer Networks**

**Lesson Plan Duration:** 15 weeks

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

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

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|  | 4th | **4. Network Architecture:** Ethernet Specification | 2nd | Address on a workstation |
| 7th | 1st | Ethernet Standardization | 1st | Revision |
| 2nd | 10 Mbps (Traditional Ethernet) |
| 3rd | 10 Mbps (Fast Ethernet) | 2nd | Managing user accounts in windows |
| 4th | 1000 Mbps (Gigabit Ethernet) |
| 8th | 1st | Introduction to Media Connectivity | 1st | Managing user accounts in LINUX |
| 2nd | Leased lines |
| 3rd | ISDN | 2nd | Study of sub netting of IP address |
| 4th | PSTN |
| 9th | 1st | RF | 1st | Demonstration of sub netting of IP address |
| 2nd | DSL |
| 3rd | VSAT | 2nd | Revision |
| 4th | Optical and IPLC |
| 10th | 1st | Revision | 1st | Use of Netstat |
| 2nd | **5.Connectivitydevices:** Network connectivity Devices |
| 3rd | NICs | 2nd | Use of Netstat and its options. |
| 4th | Hubs, bridges |
| 11th | 1st | Repeaters, switches | 1st | Revision |
| 2nd | Multiplexers |
| 3rd | Modems | 2nd | Connectivity troubleshooting using PING |
| 4th | Routers |
| 12th | 1st | Gateways | 1st | Connectivity troubleshooting using IPCONFIG |
| 2nd | Revision |
| 3rd | **6. Network Trouble Shooting Techniques:**  Introduction | 2nd | Connectivity troubleshooting using IFCONFIG |
| 4th | Trouble Shooting process |
| 13th | 1st | Trouble Shooting Tools: PING | 1st | Revision |
| 2nd | IPCONFIG |
| 3rd | IFCONFIG | 2nd | Installation of Network Operating  System(NOS) |
| 4th | NETSTAT |
| 14th | 1st | TRACEROOT | 1st | Installation of Network Operating  System(NOS) |
| 2nd | Wiresharp/ Dsniffer/ Pcop |
| 3rd | Revision | 2nd | Installation of Network Operating  System(NOS) |
| 4th | **7. IEEE:** 802.11-Architecture |
| 15th | 1st | 802.11- Architecture | 1st | Visit to nearby industry for latest networking  techniques |
| 2nd | Bluetooth- Architecture |
| 3rd | Bluetooth- Architecture | 2nd | Revision |
| 4th | Revision |