**Lesson Plan (Session- 2025-26)**  
**B. C. A. – III, Sem. – 5th**

**Network Infrastructure and Data Communication Technologies**

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| **S. No.** | **Month** | **Contents** |
| 1 | July-August | Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies;  Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways;  Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; OSI Reference Model; TCP/IP Model |
| 2 | September | Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques .  **REVISION OF SYLLABUS COVERED YET AND ASSIGNMENT 1** |
| 3 | October | |  | | --- | | Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N, and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth; |   .**REVISION OF SYLLABUS COVERED YET AND ASSIGNMENT 2 AND SESSIONAL** |
| 4 | November | |  | | --- | | Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, hierarchical Routing; Congestion Control; Traffic shaping; Choke packets; Load shedding; Application Layer: Introduction to DNS, E-Mail, and WWW services; Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures; |   **Discussion on short questions based on covered chapter Revision of Syllabus** |