

COMPUTER NETWORKS MID-TERM DETAILED SYLLABUS

1. Introduction Concepts

1. Goals and Applications of Networks
2. Network Structure and Architecture
3. The OSI Reference Model and Services
4. Network Topology Design and Delay Analysis
5. Physical Layer Transmission Media
6. Switching Methods

2. Data Link Layer

1. Sliding Window Protocols
 - Go-Back-N Protocol
 - Selective Repeat Protocol
 - Stop-and-Wait Protocol
2. Error Handling Techniques
 - Error Detection
 - Parity Check
 - Hamming Distance
 - Cyclic Redundancy Check (CRC)
3. Framing
 - Bit Stuffing
 - Byte Stuffing

4. Medium Access Sublayer

1. Medium Access Sublayer Overview
2. Channel Allocations
4. ALOHA Protocols
5. CSMA
6. CSMA/CD (Carrier Sense Multiple Access with Collision Detection)
7. CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance)

5. Network Layer

1. Network Layer Overview
2. IP Packet and IP Address
 - Classful Addressing
 - Classless Addressing
 - Subnetting
3. IPV4 Header
 - Fragmentation
4. Routing Protocols
 - RIP (Routing Information Protocol)
 - OSPF (Open Shortest Path First)
 - BGP (Border Gateway Protocol)