Subject Name: CS2060 High Speed Networks

Staff Name : R.Balasubramaniyan, AssistantProfessor

Year : Final Year –ECE ‘B’ Section

**Syllabus:**

**UNIT I HIGH SPEED NETWORKS**

Frame Relay Networks – Asynchronous transfer mode – ATM Protocol Architecture,ATM logical Connection, ATM Cell – ATM Service Categories – AAL, High Speed LANs:Fast Ethernet, Gigabit Ethernet, Fiber Channel – Wireless LANs: applications,requirements – Architecture of 802.11

**UNIT II CONGESTION AND TRAFFIC MANAGEMENT**

Queuing Analysis- Queuing Models – Single Server Queues – Effects of Congestion –Congestion Control – Traffic Management – Congestion Control in Packet SwitchingNetworks – Frame Relay Congestion Control.

**UNIT III TCP AND ATM CONGESTION CONTROL**

TCP Flow control – TCP Congestion Control – Retransmission – Timer Management –Exponential RTO backoff – KARN’s Algorithm – Window management – Performance ofTCP over ATM. Traffic and Congestion control in ATM – Requirements – Attributes –Traffic Management Frame work, Traffic Control – ABR traffic Management – ABR ratecontrol, RM cell formats, ABR Capacity allocations – GFR traffic management.

**UNIT IV INTEGRATED AND DIFFERENTIATED SERVICES**

Integrated Services Architecture – Approach, Components, Services- QueuingDiscipline, FQ, PS, BRFQ, GPS, WFQ – Random Early Detection, DifferentiatedServices

**UNIT V PROTOCOLS FOR QOS SUPPORT**

RSVP – Goals & Characteristics, Data Flow, RSVP operations, Protocol Mechanisms –Multiprotocol Label Switching – Operations, Label Stacking, Protocol details – RTP –Protocol Architecture, Data Transfer Protocol, RTCP.

**TEXT BOOK**

1. William Stallings, “HIGH SPEED NETWORKS AND INTERNET”, Pearson

Education, Second Edition, 2002.

**REFERENCES**

1. Warland, PravinVaraiya, “High performance communication networks”, Second

Edition , Jean Harcourt Asia Pvt. Ltd., , 2001.

2. IrvanPepelnjk, Jim Guichard, Jeff Apcar, “MPLS and VPN architecture”, Cisco

Press, Volume 1 and 2, 2003.

3. Abhijit S. Pandya, Ercan Sea, “ATM Technology for Broad Band Telecommunication

Networks”, CRC Press, New York, 2004.