CS324: High Speed Networks	L	T	P	Computer Networks
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Course Objective: To highlight the features of different technologies involved in high speed networking and their performance

S. No.	Course Outcomes (CO)
CO1	Understand ATM and high-speed LAN technologies.
CO2	Analyze queuing models and congestion management.
CO3	Explain TCP and ATM congestion control mechanisms.
CO4	Understand Integrated and Differential Services.
CO5	Describe QoS support protocols: RSVP, MPLS, RTP.
CO6	Explore internetworking, BGP, IPv6, and security systems.

S. No	Contents	Contact Hours
UNIT 1	High Speed 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	8
UNIT 2	Congestion And Traffic Management: Queuing Analysis- Queuing Models – Single Server Queues – Effects of Congestion – Congestion Control – Traffic Management – Congestion Control in Packet Switching Networks	8

UNIT 3	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	**8**
UNIT 4	INTEGRATED AND DIFFERENTIAL SERVICES Integrated Services Architecture - Approach, Components, Services- Queuing Discipline, FQ, PS, BRFQ, GPS, WFQ - Random Early Detection, Differentiated Services	**8**
UNIT 5	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.	**8**
UNIT 6	Internetworking: Inter-domain Routing, BGP, IPv6, Multicast Routing Protocols, Applications and Other Networking Technologies: RTP, RTSP, SIP, VoIP, Security Systems, SSH, PGP, TLS, IPSEC, DDoS Attack	**8**
	Total	**48**