

CS206	Computer Networks		T	P
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Introduction to Internetworking and TCP/IP.

Addressing and Routing: Logical Addressing- IPv4 Addresses, IPv6 Addresses. Internet protocol- Internetworking, IPv4, IPv6, transition from IPv4 to IPv6. Address Mapping- ARP, RARP, BOOTP, DHCP, Error Reporting- ICMP. Multicasting-IGMP. Routing- Delivery, Forwarding, Intra and Inter-domain routing, Unicast Routing Protocols-Distance Vector Routing, Link State Routing, Path Vector Routing. Multicast Routing protocols.

TCP and UDP: Process to process delivery- Client/Server Paradigm, Multiplexing and De multiplexing, Connectionless Versus Connection-Oriented Service, Reliable Versus Unreliable. UDP- Well-Known Ports for UDP, User Datagram, UDP Operation, Use of UDP.TCP- TCP Services, TCP Features, Segment, A TCP Connection, Flow Control, Error Control. Congestion Control- Network performance, Open loop congestion control, Closed loop congestion control, Congestion control in TCP, Quality of Service.

Network Applications: DNS-Name space, Distribution of name space, DNS in the Internet, resolution, DDNS. Remote logging- TELNET, Electronic Mail- SMTP, POP, IMAP, File Transfer- FTP, WWW, HTTP, Network Management: SNMP .

Network Security: Security services- message confidentiality, message integrity, Message authentication, Digital signature, Entity authentication, Key management- Symmetric, Asymmetric. Security in the Internet: IPsec, TLS, PGP, VPN and Firewalls.

Suggested Readings:

1. B. A. Forouzan, Data Communications and Networking, Fifth edition, TMH .
2. A. S. Tanenbaum, Computer Networks, Fourth edition, PHI.
3. A. Forouzan, TCP/IP Protocol Suite, 4th Edition, McGraw Hill, 2010 4. D E. Comer, Internetworking with TCP/IP Principles, Protocols and Architecture, Pearson Education.