CSE 4773: Internetworking Protocols

# Contents:

## Intra- and Inter-networking:

Internet, Internet architecture, Internet service providers (ISP), Tier architecture of the Internet, Internet core, Access networks (DSL, cable, Wireless etc.).

## Internet routing:

Interior and Exterior routing protocols – RIP, IGRP, EIGRP, Autonomous System, OSPF, BGP – iBGP, eBGP; NAT, PAT, Proxy service, and IP Masquerading; IPv6 – IPv6 features, IPv6 addressing, Tunneling, address Auto-configuration, Transition from IPv4 to IPv6; Tunneling; Mobile IP, Mobile IPv6, Proxy mobile IPv6, and Network mobility; Multicast protocols – Multicasting and IGMP, and Multicast Routing Protocols.

## Transport layer:

SCTP – SCTP features, SCTP services, SCTP flow control and error control; TCP variants - TCP Tahoe, TCP Reno, TCP New Reno, TCP Vegas, and TCP SACK.

## Internet Applications:

Voice Over IP (VoIP), Video on Demand (VoD), IPTV, and other multimedia and real time applications.

## Quality of Service (QoS):

QoS definition and its parameters, queue management and fair scheduling, integrated service, differentiated service, CBQ and RSVP.

## Network Security:

Basic security mechanisms, Encryption and Decryption, Standard encryption algorithms – RSA, MD5, Diffie-Hellman algorithm and IPSec.

# Recommended Texts:

1. TCP/IP Protocol Suite, Behrouz A Forouzan

2. Computer Networking A Top-Down Approach Featuring the Internet, James F. Kurose, Keith W. Ross

3. Cryptography and Network Security: Behrouz A. Forouzan