CISC 7334 [*749X] Computer Communication Networks
37½ hours plus conference and independent work; 3 credits

Advanced concepts in computer organization and an introduction to the fundamental
principles of computer communication networks. Network structure and architecture. The
ISO Reference Model. Protocols and their software implementation. Point-to-point,
satellite, radio, and local area networks. Routing, congestion, and flow control
algorithms. Examples of current networks.

Textbook:


Syllabus:

Lectures 1 & 2:
  Introduction to Computer Networks and Protocols: Types of Networks; Topological
  Structures; Protocol Concepts; The OSI Model; The TCP/IP Protocol Architecture.
  H.W. - Chapters 1, 2 & 10:

Lectures 3 & 4:
  Data Link Concepts: Issues & Requirements; Flow Control Methods; Error Control
  Methods. Data Link Protocols: HDLC; SDLC; LAPB; LAPD; LAPF; SLIP; PPP.
  H.W. - Chapter 7:

Lecture 5:
  Network Layer Concepts: Design Issues and Requirements; Virtual Circuit and
  H.W. - Chapter 10:

Lecture 6:
  Frame Relay Networks: Frame Relay Protocol Architecture; Call Control; User Data
  H.W. - Chapters 10 & 13:

Lecture 7:
  Local Area Networks: LAN Topologies and Transmission Media; LAN Protocol
  Standards: IEEE 802 and FDDI.
  H.W. - Chapters 15 & 16:
Midterm Examination

Lectures 8 & 9:
Internetworking: Design Requirements; Architectural Approaches: Gateways, Routers, & Bridges; Bridged LANs; Network Layer Structure, Internet Protocols: IP, ICMP, IPv6, ICMPv6; Internet Routing Protocols: ARP, RARP, RIP, OSPF, EGP, BGP.
H.W. - Chapters 18 & 19:

Lecture 10:
Transport Layer Protocols: Design Requirements; Transport Layer Services;
Transport
Layer Protocols: TCP, UDP.
H.W. - Chapter 20:

Lectures 11 & 12:
H.W. - Chapter 22:

Lecture 13:
The World Wide Web: Uniform Resource Locators (URLs); Web Browsing: HTTP, HTML, CGI, JAVA Applets;
H.W. - Chapter 22: