Networks and Data Communications
CS 447-001 - Fall 2019

Textbook Reading Requirements

The followings are the textbook sections (in “Computer Networking: A Top-Down Approach” by James F. Kurose and Keith W. Ross, (Sixth/Seventh Edition) that are required to be read before each lecture.

Week 1:
- Local-area-network (LAN) and Wide-Area-Network (WAN): Section 1.2
- The Internet and intra-net: Section 1.2
- Circuit-switching and packet-switching networks: Section 1.3

Week 2:
- Socket programming: Section 2.1 and 2.7

Week 3:
- Stop-and-Wait ARQ: Section 3.4
- Selective-Reject & GBN ARQs: Section 3.4

Week 4:
- Domain address, host address, CIDR-IP address: Section 4.4.2

Week 5:
- Bus, ring and star LAN, Repeaters, bridges and routers: Section 4.3 and 5.4
- MAC address, IP address, and host name translation (DNS and ARP): Section 2.5

Week 6:
- Dijkstra and Bellman-ford algorithms, distance-vector routing protocol: Section 4.5

Week 7:
- TCP-slow start linear-growth flow-control: Section 3.7
- CSMA/CD and binary back-off, one-persistent, and p-persistent: Section 5.3

Week 8:
- TDM switch, cross-bar switch and knockout switches: Section 4.3
- concept of blocking and non-blocking switches: Section 4.3
- Internet routing: Section 4.6

Week 9:
- HTTP protocol and web server design: Section 2.2

Week 10:
- QoS Control and DiffServ: Section 7.5

Week 11:
- Wireless and cellular networks: Section 6.1 and 6.4
Week 12:
- Cloud computing and CDN: Section 5.6 and 7.2.4

Week 13:
- Network security: Section 8.1

Week 15:
- Synchronous and asynchronous signal transmissions: Section 5.1 and 5.2
- Time-division and frequency-division multiplexing: Section 5.3