Course Outline and Approximate Dates

Sept 28 - 30: Introduction: design principles, pipes, protocols, and how the web works
Peterson Ch. 1
Clark, The Design of the Internet Protocols

Phase 1: From unreliable Internet messages to application-to-application communication

Oct. 2 - 7: Reliable delivery: stop and wait, pipelining, sliding window, selective repeat, RTT est.
Peterson Ch. 3.5

Oct. 9 - 16: Protocols: UDP, TCP, sockets, send/receive, RPC, HTTP, transactions
Peterson Ch. 6, 7.1, 9.1

Phase 2: From bits to messages across the Internet

Oct. 19 - 23: The hardware zoo: Bits, frames, CRC's, host adaptors, Ethernets, LANs, Internets
Peterson Ch. 3.1 - 3.4, 3.6, 3.8, 4.4., 9.2

Oct. 27, 5pm: Project 1 due

Oct. 26 - 30: Routing: spanning tree, link state, distance vector, ATM, IP, DHCP
Peterson Ch. 4.1-4.3, 5.1-5.4

Nov. 2 - 6: Congestion control: drops, ECN, RED, Vegas, rates, credits
Peterson Ch. 8

Nov. 9: Midterm

Phase 3: Using networks to build applications

Nov. 11 - 16: Multicast: routing, reliability, address allocation, scoping, ordering
Peterson Ch. 5.5

Nov. 19, 5pm: Project 2 due

Nov. 18 - 20: Scalable services: caching, replication, coherence, DNS, AFS, RentAServer
Peterson Ch. 5.6

Nov. 23 - 30: Internet challenges: Real time, mobility, usage pricing
Peterson Ch. 7.2, 9.3

Dec. 2 - 7: Security: encryption, authentication, viruses
Peterson Ch. 7.3

Dec. 11, 5pm: Project 3 due

Dec. 14: Final Exam