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| 1 | Introduction, Overview, class plan, delivery etc. | 30-8-18 | L+ D |
| 2 | Principles of Network Applications: Network Application Architecture, Transport Services Available to Applications | 01-08-18 | L+ D |
| 3 | Processes Communicating, Transport Services Available to Applications, Transport Services Provided by the Internet, Application-Layer Protocols. | 03-08-18 | L+ D |
| 4 | The Web and HTTP, Overview of HTTP, HTTP Message Format | 03-08-18 | L+D |
| 5 | Non-persistent and Persistent Connections, User-Server Interaction: Cookies, Web Caching, The Conditional GET | 06-08-18 | PS |
| 6 | File Transfer: FTP Commands & Replies | 07-08-18 | L+ D |
| 7 | Electronic Mail in the Internet: SMTP, Comparison with HTTP, Mail Message Format, Mail Access Protocols | 08-08-18 | L+ D, .PS |
| 8 | DNS; The Internet's Directory Service: Services Provided by DNS, Overview of How DNS Works, DNS Records and Messages, | 10-08-18 | L+ D, PS |
| 9 | Peer-to-Peer Applications: P2P File Distribution, Distributed Hash Tables | 13-08-18 | L+I |
| 10 | Socket Programming: creating Network Applications: Socket Programming with UDP, Socket Programming with TCP | 14-08-18 | L+D |
| 11 | Transport Layer : Introduction and Transport-Layer Services:,Relationship Between Transport and Network Layers | 18-08-18 | L+ D |
| 12 | Overview of the Transport Layer in the Internet, Multiplexing and Demultiplexing: Connectionless Transport | 20-08-18 | L+ D |
| 13 | UDP,UDP Segment Structure, UDP Checksum | 13-08-18 | L+ D |
| 14 | Principles of Reliable Data Transfer: Building a Reliable Data Transfer Protocol, Pipelined Reliable Data Transfer Protocols | 28-08-18 | L+D |
| 15 | Go-Back-N, Selective repeat | 29-08-18 | L+D |
| 16 | Connection-Oriented Transport TCP: The TCP Connection, TCP Segment Structure, Round-Trip Time Estimation and Timeout, | 03-09-18 | L+ D |
| 17 | Reliable Data Transfer, Flow Control, TCP Connection Management, | 04-09-18 | L+D |
| 18 | Principles of Congestion Control: The Causes and the Costs of Congestion, Approaches to Congestion Control | 05-09-18 | L+ D |

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| 19 | Network-assisted congestion-control example, ATM ABR Congestion control, TCP Congestion Control: Fairness | 07-09-18 | L+ D |
| 20 | Review, and problem solving | 10-09-18 | L+I |
| 21 | Review, and problem solving | 11-09-18 | PS |
| 22 | T1 Discussion | 18-09-18 | L+ D |
| 23 | The Network layer: What's Inside a Router?: Input Processing, Switching, Output Processing, | 19-09-18 | L+ D |
| 24 | Where Does Queuing Occur? Routing control plane, | 24-09-18 | L+ D |
| 25 | IPv6,A Brief foray into IP Security | 25-09-18 | L+ D |
| 26 | Routing Algorithms: The Link-State (LS) Routing Algorithm | 26-09-18 | L+D |
| 27 | The Distance-Vector (DV) Routing Algorithm, | 28-09-18 | L+ D |
| 28 | Hierarchical Routing, Routing in the Internet, Intra-AS Routing in the Internet: RIP | 29-09-18 | L+ D |
| 29 | Intra-AS Routing in the Internet: OSPF, Inter/AS Routing: | 01-10-18 | L+ D |
| 30 | Broadcast Routing Algorithms and Multicast | 03-10-18 | L+I |
| 31 | Review and Exercises | 05-10-18 | L+D |
| 32 | Guest Lecture | 09-10-18 | L+ D |
| 33 | Wireless and Mobile Networks: Cellular Internet Access: An Overview of Cellular Network Architecture, | 10-10-18 | L+ D |
| 34 | 3G Cellular Data Networks: Extending the Internet to Cellular subscribers, On to 4G, LTE | 12-10-18 | L+ D |
| 35 | Mobility management: Principles, Addressing, Routing to a mobile node | 13-10-18 | L+ D |
| 36 | Mobile IP, Managing mobility in cellular Networks, Routing calls to a Mobile user | 15-10-18 | L+D |
| 37 | Handoffs in GSM, Wireless and Mobility, | 16-10-18 | L+ D |
| 38 | Impact on Higher-layer protocols | 17-10-18 |  |
| 39 | Review and Exercises, T2 discussion | 22-10-18 | L+ D |
| 40 | Multimedia Networking: Properties of video, properties of Audio | 23-10-18 | L+ D |
| 41 | Types of multimedia Network Applications, Streaming stored video: UDP Streaming, HTTP Streaming, Adaptive streaming and DASH, | 29-10-18 | L+I |
| 42 | content distribution Networks, case studies: : Netflix | 30-10-18 | L+D |
| 43 | CDN: You Tube and Kankan | 31-10-18 | L+ D |
| 44 | Network Support for Multimedia: Dimensioning Best-Effort Networks, | 02-11-18 | L+ D |
| 45 | Providing Multiple Classes of Service, Diffserv, | 03-11-18 | L+ D |
| 46 | Per-Connection Quality-of- Service (QoS) Guarantees | 05-11-18 | L+ D |
| 47 | Resource Reservation and Call Admission | 09-11-18 | L+D |
| 48 | T3 discussion | 12-11-18 | L+ D |
| 49 | Review and Exercises | 13-11-18 | L+ D |
| 50 | Review and Exercises | 14-11-18 | L+ D |