Schedule/Download

2025년 2월 18일 화요일 09:12

Schedule/Downloads (Last update: 02/14/25)

- The schedule is tentative and subject to change.

Chapter	Topic		24-1 Handout	Week	Date and Lecture Video	Annotated Handout	25-1 Date	Daily Quiz #	
0	Course Administration		ch00.pdf		2/20화	01	2/18T		
1	The Internet	hosts, routers, links		1	2/22목	02	2/20Th	02	
		IP packets							
		packet vs. circuit switching, addressing, routing table	ch01.pdf		2/27화	03	2/25T	03	
		error detection and ARQ, congestion and flow controls, DNS, WWW, http, hyperlink, URL		2					
2	Principles	Connectivity, cost, network topology, scalability, extensibility, sharing links, backbone network	ch02.pdf		2/29목	04	2/27Th	04	
		bandwidth vs. capacity, rate, delay of a packet		3					
		throughput of a transfer; window size, RTT, and bottleneck link of a transfer; new apps and new metric, delay jitter; M/M/1 queue, Little's results,			3/5화	05	3/4T	05	
		fairness; Scalability, addressing, routing, naming, gateway, subnet			3/7목	06	3/6Th	06	
		Flexibility, layers; (Ethernet as a layer 1-2 protocol, TCP/IP as a layer 3-4 protocol suite,							

		OSI 7 layers by ISO, ITU OTU4; Application Topology, client-server, p2p, etc.)							
3	Ethernet	Typical installation, History	ch03.pdf	4	3/12화	07	3/11T	07	
		multiple-access, broadcast, FDD, ALOHA network, collision			3/14 목	**Quiz #1 (See PLMS)**	3/13Th	Quiz A	
						08	3/18T	08-09	
		capture, randomized MA, cable Ethernet, CSMA/CD, IEEE		5	3/19화	09			
		IEEE 802 Working groups, Addresses, Frame, PHY			3/21목	10	3/20Th	10	
		Switched Ethernet, Performance Analysis, slotted ALOHA		6	3/26T	11	3/25T	11	
		maximum CDT							
4	Wi-Fi	WLAN, IEEE802.11, Wi-Fi, radio spectrum bands, radar frequency bands, ISM bands, U-NII bands, channel, bandwidth vs. channel width	ch04.pdf		3/28Th	12	3/27Th	12	
		Basic Operations, Medium Access Control, CSMA/CA, RTS, CTS		7	4/2T	13	3/31M	Exam 1	
							4/1T	13	
		Frames, PHY frame, PLCP header, preamble PHY of Wi-Fi 4--6, Real passband signal and its Equivalent Complex baseband signal, Complex-valued modulation symbol, QAM, MCS, MIMO, SU-			4/4Th	14	4/3Th	14	

		MIMO, DL-MU-MIMO, UL-MU-MIMO							
						Exam #1(covers upto CM#14)			
		MAC performance analysis			4/9T	15	4/8T	15	
5	Routing	Two-level routing	ch05.pdf	8	4/11Th	16	4/10Th	16	
		Inter-domain routing, Destination-based, peering vs. transit agreement, routing table, path vector, next hop IP address the BGP for inter-domain routing, Case study on Facebook outage, IXP, Case Study on an ISP's backbone traffic analysis							
		Dijkstra's algorithm for intra-domain routing, Bellman-Ford algorithm, Anycast, Multicast, FEC in L3		9	4/16T	17	4/15T	17	
		Network coding, ad hoc network			4/18Th	18	4/17Th	18	
6	Internetworking	internetworking, connected, broadcasting capable, subnet, gateway	ch06.pdf						
		ARP, DHCP: static vs. dynamic IP addresses, NAT: public vs. private IP addresses,		10	4/23T	19	4/22T	19	
7	Transport	Port, Applications, Port Forwarding, Transport layer, UDP and header, TCP header, TCP states,	ch07.pdf		4/25Th	20	4/24Th	20	
		Error control, Congestion control,		11	4/30T	21	4/29T	21	

		AIMD							
		Fast retransmit, Fast recovery, TCP Slow Start, Flow control			5/2Th	**Quiz #2 (covers upto CM#21)**	5/1Th	Quiz B	
						22			
9	LTE and NR	9.0 Introduction - A brief history of electrical communications, - Modern telecommunications network, - Wireless telephone	ch09a.pdf	12	5/7T	23	5/8Th	22-23	
		9.1 Cellular Network - the cellular concept, - frequency reuse factor, - cell planning -PSTN		13	5/14T	24	5/13T	24	
		9.2 Technology Evolution			5/16Th	25	5/15Th	25	
		9.3 Key Aspects of LTE		14	5/21T	26	5/20T	26	
		9.4 LTE-Advanced 9.8 5G NR	ch09b.pdf		5/23Th	27	5/22Th	27	
		9.9 C-RAN, vRAN, and O-RAN	ch09c.pdf	15	5/28	28	5/27T	28	
8	Models	Graph, Probability, Queueing, and Optimization	ch08.pdf		5/30	29	5/28Th	29	
10	QoS	End-to-end principle, meaning of QoS in networking, net neutrality	ch10.pdf						
11	Physical Layer	Radio Link, channel capacity, AWGN ber vs. Eb/N0; Optical Link	ch11.pdf						
12	Additional Topics	Switches, Sensor network,	ch12.pdf						

		Distributed algorithms, Byzantine agreement problem, Source compression, SDN and NFV, IoT, Remote computing and storage paradigms							
		Final Exam (Chs. 1–12)					6/2M	Exam 2	