

University of Computer Studies (Thaton)
2023-2024 Academic Year
Fourth Year (B.C.Tech.)
Lecture Plan

CT-4133 Computer Networks II

First Semester

References. :

- [1] Computer Networking: A Top-Down Approach (8th Edition) by James F. Kurosen and Keith W. Ross
 [2] Data and Computer Communication (10th edition) by William Stallings
 [3] TCP/IP Protocol Suite (4th Edition) by Behrouz A. Forouzan

Prerequisites : Computer Networks I

Period : 64 periods for 16 weeks (4 periods * 16 weeks) (1 period – 1 hr)

No.	Chapter		Page	Period	Detail Lecture Plan
1	Chapter 6	The Link Layer and LANs	449-509	8	Ref. [1]
	6.1	Introduction to the Link Layer	450-452		
	6.2	Error-Detection and -Correction Techniques	454-456		Definition
	6.3	Multiple Access Links and Protocols	461-463		
	6.3.2	Random Access Protocols	465-474		
	6.3.3	Taking Turns Protocol	474-475		
	6.3.4	DOCSIS: The link-layer protocol for Cable Internet Access	475-477		
	6.4	Switched Local Area Networks	477-478		
	6.4.1	Link-Layer Addressing and ARP	478-484		
	6.4.2	Ethernet	484-488		
		Ethernet Technologies	370-377		Ref. [2]
					Overview
	6.4.3	Link-layer switches	491-497		
	6.4.4	Virtual Local Area Networks (VLANs)	497-504		
	6.6	Data Center Networking	505-505		
	6.6.1	Data Center Architectures	505-509		
	6.6.2	Trends in Data Center Networking	509-512		Overview
		Review Questions			
2	Chapter 7	Wireless and Mobile Networks	531-567	7	Ref. [1]
	7.1	Introduction	532-536		
	7.2	Wireless Links and Network Characteristics	536-539		Overview
	7.2.1	CDMA	539-542		
	7.3	WiFi: 802.11 Wireless LANs	542-544		Overview
	7.3.1	The 802.11 Wireless LAN Architecture	544-548		

No.	Chapter		Page	Period	Detail Lecture Plan
	7.3.2	The 802.11 MAC Protocol	548-553		Detail : RTS and CTS
	7.3.4	Mobility in the Same IP Subnet	556-558		
	7.3.5	Advanced Features in 802.11	559-560		Overview
	7.3.6	Personal Area Networks: Bluetooth	560-562		
	7.4	Cellular Networks: 4G and 5G	563-564		
	7.4.1	4G LTE Cellular Networks: Architecture and Elements	564-567		
	7.4.2	LTE protocol stacks	570-571		
	7.4.6	5G cellular networks	475-578		Overview
		Review Questions			
3	Chapter 4	The Network Layer: Data Plane		7	Ref. [1]
	4.1.1	Forwarding and Routing: The Data and Control Planes	304-309		
	4.2	What's Inside a Router?	311-330		
	4.4	Generalized Forwarding and SDN	353-355		
	4.4.1	Match	355-356		
	4.4.2	Action	356-357		
	4.4.3	OpenFlow Examples of Match-plus-action in Action	357-360		
	4.5	Middle Boxes	360-361		
		Review Questions			
4	Chapter 5	The Network Layer: Control Plane		3	Ref. [1]
	5.7	Network Management and SNMP	425-426		Skip: NETCONF/YANG
	5.7.1	The Network Management Framework	426-428		
	5.7.2	The Simple Network Management Protocol (SNMP) and the Management Information Base (MIB)	428-432		
		Review Questions			
5	Chapter 25	Multimedia		7	Ref.[3]
	25.1	Introduction	729		Definitions
	25.2	Digitizing Audio and Video	730		Overview
	25.3	Audio and Video Compression	731-736		Overview
	25.4	Streaming Stored Video/Audio	736-739		Overview
	25.6	Real-time Interactive Audio/Video	740-744		Definitions
	25.7	RTP	744-746		
	25.8	RTCP	746-747		

No.	Chapter		Page	Period	Detail Lecture Plan
	25.9	Voice over IP	748-752		
	25.1	Quality of Service	752-758		
	25.11	Integrated Services	758-762		
	25.12	Differentiated Services	762-763		
		Total		32	

Period for lab: 32

No	Lab	Description
1	Lab-1	Basic Switch Settings
2	Lab-2	Switch Security Features
3	Lab-3	VLANs and Trunking Topology
4	Lab-4	Link Aggregation: EtherChannel
5	Lab-5	Spanning Tree Protocol
	Lab Assessment I	
6	Lab-6	Wireless Network configuration
7	Lab-7	SNMP
8	Lab-8	SDN Lab with Mininet
	Lab Assessment II	

Assessment Plan for the Course

Exam	60%
Tutorial	10%
Lab	10%
Lab Assessment	10%
Quiz/Test	10%