Semester plan

Course Name code : Advance Communication Engineering(66853)

T	P	C
3	3	4

Technology :Fifth Semester

Teachers Name :Rumana tabassum

Tech :Electronics

Kurigram polytechnic Institute,Kurigram.

Serial	No Of Week	No Of Class		General Objectives	Specific Objectives	Remark
		Theo	Prac			
1	1	1		1 Understand the basics of computer architect Understand Communication Switching System.	2.1Mention the elements of communication switching system 2.2 Describe the criteria for the design of Telecommunication system.	
		2			1.3 Explain the centralized switching and distributed switching. 1.4 Discuss the typical hierarchical network structure.	
		3		2 Understand Electronic Switching System	2.1 mention the classification of switching system. 2.2 Discuss the functions of switching system. 2.3 Recognize the requirements of switching system. 2.4 Explain centralized and distributed SPC switching system. 2.5 Discuss circuit switching, message switching and packet switching	
			1	*1. Observe the frequency response of Fiber optic Receiver.*		

2	2	1		3 Understand Digital Switching System.	3.1Define digital switching. 3.2 Mention the evaluation of digital switching. 3.3 Mention the advantages and disadvantages of digital transmission. 3.4 Describe the digital signal encoding formats.	
		2			3.5 Discuss asynchronous and synchronous transmission. 3.6 Describe space division switching. .	
		3			. 3.7 Describe analog time division and digital time division switching. 3.8 Explain ST, TS, STS & TST SWITCHNIG	
			2	***2.*** *Perform voice communication Using MIC, Speaker and OF.*		
3	3	1		4 Understand Digital subscriber Line (DSL) Technology	4.1 Define XDSL & ADSL. 4.2 Mention various types of XDSL. 4.3 State the principle of XDSL 4.4 Discuss encoding and modulation in XDSL.	

		2			4.5 Mention the frequency spectrum of ADSL. 4.6 Describe the topology & frame format for ADSL system.	
		3			4.7 Mention the capabilities of ADSL. 4.8 Mention the advantages of ADSL.	
			3	***3.*** *Study the voice communication using AM receiver and optical fiber Link.*		
4	4	1		5 Understand the optical fiber communications.	5.1 Mention the electromagnetic spectrum showing the region used for optical fiber communications 5.2 Describe the block diagram of an optical fiber communication system. 5.3 Define optical fiber.	
		2			5.4 Describe the basic structure of an optical fiber. 5.5 Explain propagation of light waves in optical fiber. 5.6 Illustrate the acceptance angle, and numerical aperture of a fiber. 5.7 Describe the types of optical fiber. 5.8 Describe the dispersion in an optical fiber. 5.9 Describe the construction of optical	

					fiber cables. 5.10 Mention the advantages and disadvantages of optical fibers.	
5	5	1		6 Understand the light sources and detector for optical fibers.	6.1 Describe the structure of LED. 6.2 Explain the method of fiber LED coupling. 6.3 Describe the laser operation.	
		2			6.4 Describe the structure of semiconductor laser diode. 6.5 Mention the advantages of semiconductor laser diode.	
		3			6.6 Describe the basic principle of photo detectors. 6.7 State the characteristics of photo detector.	
			4	***4*** *Study the voice communication using FM receiver and optical fiber Link.*		

6	6	1		7 Understand optical fiber joints, couplers and isolators	7.1 List the possible misalignment occur during fiber joints 7.2 Mention the connection problems when joining fibers	
		2			7.3 Define fiber splice 7.4 Describe different fiber splices	
		3			7.5 Recognize different types fiber connectors 7.6 Discuss fiber couplers 7.7 Describe optical Isolators and circulators	
			5	**5 Study the connection & operation of MODEM (Modulation/Demodulation) in the PC.**		
7	7	1		8 Understand the satellite communication.	8.1 Define the term satellite. 8.2 State the classification of satellite.	
		2			8.3 Mention the frequency allocations and band spectrum of satellite communication. 8.4 Describe the general structure of satellite communication system.	
		3			8.5 Describe the satellite orbits. 8.6 State the footprint of a satellite and solar eclipse.	
					8.7 Explain the satellite location with respect to earth.	

8	8	1			ClassTest&QuizeTest	
9	9	1		9 Understand the communication satellite subsystem.	9.1 Describe the satellite earth station with block diagram. 9.2 Describe the block diagram of the Transponder.	
		2			9.3 Discuss the telemetry system of communication satellites. 9.4 Describe the command system of communication satellites.	
		3			9.5 Discuss the tracking and ranging system of communication satellites. 9.6 Explain the attitude control of satellite with block diagram. 9.7 Describe the components of satellite electric power system.	
			5	Class test (1^{st}-3^{rd} job)		
10	10	1		10.Understand the special purpose communication satellite.	10.1 Describe the very small terminals (VSATs). 10.2 Describe the function of international telecommunication satellite (INTERSAT).	
		2			10.3 Describe mobile satellite (MSAT) communication system..	
		3			10.4 Explain the Global positioning system (GPS). 10.5 Describe the block diagram of a	

					handheld GPS receiver	
					10.5 Compare the satellite communication with respect to fiber optic communication. 10.6 Mention the fields of satellite application.	
			6	Review		
11	11	1		**11** Understand the data communication network**.**	11.1 Define the term network. 11.2 State the types of network. 11.3 Describe the network topologies.	
		2			11.4 State the various data-link protocols. 11.5 Explain the term Token passing and VOIP.	
		3			11.6 Describe the Ethernet. 11.7 Illustrate the function of modem.	
			7	review		
12	12	1		12 Understand Synchronous Optical Network (SONET)	12.1 Define SONET & SDH 12.2 Mention the characteristics of SONET.	
		2			12.3 State SONET Signal	

					Hierarchy 12.4 Mention SONET components. 12.5 Discuss SONET Network and Layers	
			8	Class test (4^{th}-5^{th} job)		
13	13	1	9	13 Understand ATM technology.	13.1 Define ATM technology. 13.2 List the Advantages of ATM. 13.3 Explain the concepts of ATM.	
		2	10		13.4 Discuss ATM Header Structure. 13.5 Describe ATM Layers.	
		3		14 Understand The integrated Services Digital Network (ISDN).	14.1 Define ISDN. 14.2 Mention the ISDN services. 14.3 List the advantages of ISDN. 14.4 Describe the ISDN interfaces. 14.5 Describe the ISDN channels. 14.6 Describe the ISDN switching, functional grouping and reference points.	

14	14					

Serial	No Of Week	No Of Class		General Objective	Specific Objectives	Remark
		Theo	Prac			
14	14	1		15 Understand mobile communication.	15.1 Define mobile communication. 15.2 State the Cellular telephone system. 15.3 Describe the basic composition of mobile communication system. 15.4 Explain the generation of the Cellular telephone system. 15.5 Describe cell splitting, frequency reuse, roaming, and handoff in cellular telephone. 15.6 Mention the channels and bands of the different Cellular telephone system. 15.7 Describe the subscriber identification techniques.	
		2				
		3		16 Understand Cellular telephone network	16.1 Explain the term GSM network. 16.2 Describe the architecture of The GSM network. 16.3 Describe the typical call flow sequence in GSM (location updating, mobile call origination mobile call termination, authentication and encryption) .	

			1		**Review**	

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15	15	o 1				
16	16	1			16.4 State the basic principle of CDMA. 16.5 Mention the CDMA frequency and channel allocations. 16.6 Describe Short Message Management Protocol. 16.7 Describe the block diagram of a modern mobile phone hand set. 16.8 Explain the term Bluetooth, WiMAX & WAP.	
		2				
		2			**Review**	
			1		**Review**	
			1		**Review**	
			2			