Appendix - F

GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

Electronics and communication Department

Academic Year: 2016-17 Semester: EVEN

6. COURSE PLAN

Semester: VI Subject Code: 10EC81 Name of Subject: **Wireless Communication** Teacher: Soumya MJ

Name of Subject Expert (Reviewer): Kavitha M V

For the Period: From: 13-02-17 to 02-06-17

Details of Book to be referred:

Text Books	T1: Wireless Telecom Systems and networks, Mullet: Thomson Learning 2006.
Reference Books	R1. Mobile Cellular Telecommunication, Lee W.C.Y, MGH, 2nd , 2009. R2. Wireless communication - D P Agrawal: 2nd Edition Thomson learning 2007. R3. Fundamentals of Wireless Communication, David Tse, Pramod Viswanath, Cambridge 2005. R4. S. S. Manvi, M. S. Kakkasageri, "Wireles and Mobile Network concepts and protocols", John Wiley India Pvt. Ltd, 1st edition, 2010. R5. "Wireless Communication – Principles & Practice" , T.S. Rappaport, PHI 2001.

Lecture NO	Topic Planned	Practical Applications & Brief objectives	Book referred with Pg No.	Planned Date	Executed Date	Deviation Reasons thereof	How Made Good / Reciprocate arrangement	Remarks by HOD
1.	Introduction to the subject			6.2.17				
2.	**Unit.1 Wireless Telecommunication Systems And Networks:** Introduction to communication system	**Objectives:** discuss the general history of wireless radio technology, basic cellular radio concept, Basic operation and structure of 1G, 2G Concepts of 3G and 4G wireless **Outcomes:** The student will be able to : Explain basic cellular concept, basic structure and concept of internet, structure of 1G, concet of 3G, 4G differences between 1G, 2G, 2.5G **Application:** mobile communications 1G-AMPS(voice communications) 2G-text, voice and picture messages(MMS) 3G-video conferencing, mobile TV, 3D gaming etc.	T1:2, 9	7.2.17				
3.	Introduction to wireless telecommunication systems and Networks			8.2.17				
4.	Introduction to wireless telecommunication systems and Networks		T1:3	9.2.17				
5.	Cont…History and Evolution Different generations of wireless cellular networks		T1:37	13.2.17				
6.	wireless cellular networks 1G		T1:40	14.2.17				
7.	wireless cellular networks 2G		T1:58	15.2.17				
8.	wireless cellular networks 2.5G, 3G, 4G		T1:62	16.2.17				
9.	wireless cellular networks 2.5G, 3G			20.2.17				

10.	wireless cellular networks 4G			20.2.17				
11.	**UNIT-2: Common Cellular System Components** Introduction of Common Cellular network Components	**Objectives:** To learn about Components of a cellular system, 3G cellular system components, call establishment **Outcomes:** students will be able to List the components of a wireless cellular network Explain functions of the cellular hardware components like MS, RBS, BSC, MSC Database: HLR, VLR, AUC, EIR Explain basic operations of call set up and call release **Application:** mobile communications	T1:79	21.2.17				
12.	Base station system components		T1:82	22.2.17				
13.	Switching system components		T1:87	23.2.17				
14.	Home location register, ILR		T1:91	27.2.17				
15.	Class test			27.2.17				
16.	Network management system		T1:94	28.2.17				
17.	Hardware views of cellular networks		T1:96	1.3.17				
18.	software, views of cellular networks		T1:97	2.3.17				
19.	3G cellular systems components		T1:98	6.3.17				
20.	Cellular component identification		T1:99	6.3.17				
21.	Call establishment		T1:105	7.3.17				
22.	**UNIT-3: Wireless Network Architecture and Operation** Introduction to Wireless networks	**Objectives:** To learn about Wireless network architecture and operation, Cellular concept Cell fundamentals, Cellular backbone networks, Wireless network security	T1:113	8.3.17				

23.	Cellular concept	**Outcomes:** students will be able to understand the cellular concept and explain the advantages of frequency reuse, explain how the channel capacity can be expanded, concepts of power management and network security **Application:** mobile communications, Information security.	T1:114	13.3.17				
24.	Cell fundamentals		T1: 117	13.3.17				
25.	Capacity expansion techniques		T1:122	14.3.17				
26.	Cellular backhaul networks		T1:133	15.3.17				
27.	Mobility management		T1:135	16.3.17				
28.	Mobility management			20.3.17				
29.	Radio resources management power management		T1:145	20.3.17				
30.	Wireless network security		T1:148	21.3.17				
31.	**UNIT-4: GSM And TDMA Technology** Introduction	**Objectives:** To learn about TDMA, GSM and its architecture, identifiers and GSM channel concepts. Understand the components that make up a GSM cellular system **Outcomes:** students will be able to explain The TDMA concepts, GSM cellular system architecture and its components and GSM identifiers **Application:** mobile communications, Short Message Service (SMS) and	T1:154	22.3.17				
32.	TDMA techniques		R5:455	23.3.17				
33.	GSM techniques		R5:551	27.3.17				
34.	GSM system overview		T1:155	27.3.17				
35.	GSM Network and system Architecture		T1:159	28.3.17				
36.	Class test			30.3.17				
37.	GSM channel concepts		T1:168	3.4.17				
38.	GSM identifiers		T1:181	3.4.17				

		General Packet Radio Service (GPRS) services,						
39.	**UNIT-5: GSM And TDMA Technology** GSM system operation	**Objectives:** To learn about GSM And TDMA Technology, traffic cases of GSM operations, GSM protocol Architecture **Outcomes:** students will be able to explain How the call is handed over and the call is terminated. Various TDMA systems used in North and South America **Application:** Mobile communications, text, voice and picture messages(MMS)	T1:181	4.4.17				
40.	Traffic cases		T1:184	5.4.17				
41.	Cal handoff		T1:202	6.4.17				
42.	GSM protocol architecture		T1:208	10.4.17				
43.	TDMA systems		T1:218	10.4.17				
44.	**UNIT-6: CDMA Technology:** Introduction	**Objectives:** To learn about the CDMA technology, CDMA Network and System Architecture **Outcomes:** students will be able to explain The CDMA architecture, its components, the channel concepts of CDMA and its operations **Application:** mobile communications, For business purpose, CDMA	T1:229	11.4.17				
45.	CDMA technology, CDMA overview		T1:231	12.4.17				
46.	CDMA Network and System Architecture		T1:236	13.4.17				
47.	CDMA channel concept		T1:249	20.4.17				
48.	Cont..concept CDMA operations		T1:264	24.4.17				

		supports in providing high speed push to talk and push to email services.						
49.	**UNIT-7: Wireless Modulation Techniques**	**Objectives:** To learn about Wireless modulation techniques, OFDM **Outcomes:** students will be able to explain About the air interface of wireless mobile system Basic principles of OFDM **Application:** Digital Audio Broadcasting Digital television, Wireless LAN IEEE, WiMAX, ADSL, The LTE and LTE Advanced 4G mobile phone standards.	T1:334	24.4.17				
50.	Hardware, Characteristics of air interface		T1:337	25.4.17				
51.	Path loss models		T1:341	26.4.17				
52.	wireless coding techniques		T1:346	27.4.17				
53.	Class Test			2.5.17				
54.	Digital modulation techniques		T1:352	3.5.17				
55.	OFDM		T1:357	4.5.17				
56.	UWB radio techniques, Diversity techniques,		T1:361	8.5.17				
57.	Diversity techniques		T1:362	8.5.17				
58.	Typical GSM Hardware		T1:366	9.5.17				
59.	**UNIT-8: Evolution Of Wireless LAN:** Introduction to wireless LAN 802.11X technologies	**Objectives:** To learn about LAN 802.11X technologies, 802.15X technologies, PAN, wireless MAN 802.16X	T1:387	10.5.17				

60.	Introduction to 802.15X technologies	**Outcomes:** students will be able to explain Differences between wireless LANs and wireless mobile systems Various types of wireless PAN Short history of IEEE802.16 standard **Application:** mobile communications, communication through Bluetooth connection between the devices.	T1:442	11.5.17				
61.	PAN Application		T1:444	18.5.17				
62.	Bluetooth profiles, Broadband wireless MAN 802.16X		T1:448, 452	22.5.17				
63.	Revision			22.5.17				
64.	Revision			23.5.17				
65.	Revision			24.5.17				
66.	Revision			25.5.17				
67.	Revision			29.5.17				
68.	Revision			29.5.17				
69.	Revision			30.5.17				
70.	Revision			31.5.17				
71.				1.6.17				

72.				2.6.17				

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