Guru Tegh Bahadur Institute of Technology

Lecture Plan

Subject: Wireless Communication

Subject Code: ETEC-405

First Term			
Unit-1			
1	Evolution of mobile radio communications; examples of wireless comm. systems; paging systems; Cordless telephone systems	1	**FIRST**
2	Overview of generations of cellular systems, comparison of various wireless systems	1	
3	PCS architecture, Mobility management	1	
4	Networks signaling	2	
5	A basic cellular system	1	
6	Multiple access techniques: FDMA, TDMA, CDMA	1	
7	Fast Fading Wireless Channel Modeling	1	
8	Rayleigh/Ricean Fading Channels	2	
9	BER Performance in Fading Channels	1	
10	Introduction to Diversity modeling for Wireless Communications	1	
Unit-2			
11	2G Networks-Second generation	1	**TERM**
12	digital, wireless systems: GSM, IS_136 (D-AMPS), IS-95 CDMA	1	
13	Global system for Mobile Communication (GSM) system overview: GSM Architecture	3	
14	Mobility Management, Network signaling, mobile management	2	
15	voice signal processing and coding	1	
16	Spread Spectrum Systems- Cellular code Division Access Systems-Principle, Power Control	2	
17	Effects of multipath propagation on code division multiple access.	1	

Second Term			
Unit-3			
18	2.5G Mobile Data Networks-Introduction to Mobile Data Networks	1	**SECOND**
19	General Packet Radio Services (GPRS)-GPRS architecture	1	
20	GPRS Network nodes, EDGE	2	
21	Wireless LANs, (IEEE 802.11)	1	
22	Mobile IP	1	
23	Third Generation (3G) Mobile Services- Introduction to International Mobile Telecommunications 2000 (IMT 2000) vision	1	
24	Wideband Code Division Multiple Access (W-CDMA)	1	
25	CDMA 2000	1	
26	Quality of services in 3G	1	
27	Introduction to 4G	1	
Unit-4			
28	Introduction to WLL architecture, WLL technologies	2	**TERM**
29	Wireless personal area networks (WPAN)	2	
30	Blue tooth, IEEE 802.15, architecture, protocol stack	2	
31	Wi-Max, introduction to Mobile Adhoc Networks	3	
32	Global Mobile Satellite Systems, Case studies of IRIDIUM and GLOBALSTAR systems	2	

Text Books:

[T1] Raj Pandya, "Mobile & Personnel communication Systems and Services", Prentice Hall India, 2001.

[T2] Theodore S. Rappaport, "Wireless Communication- Principles and practices," 2nd Ed., Pearson Education Pvt. Ltd, 5th Edition, 2008.

Reference Books:

[R1] T.L.Singhal "Wireless Communication", Tata McGraw Hill Publication.

[R2] Jochen Schiller, "Mobile communications," Pearson Education Pvt. Ltd., 2002.

[R3] Yi –Bing Lin & Imrich Chlamatac, "Wireless and Mobile Networks Architecture," John Wiley & Sons, 2001.