ACADEMIC PLAN FOR SEMESTER-VII (for 2016-17)

SUBJECT : **Wireless Communication** **Subject Code: ETEC – 405**

Total Lecture Available: 35

Teaching weeks in semester: 12 weeks **Total number of Tutorials:**

S.No.	TOPICS TO BE COVERED	Total No. of Lecture	Tutorial
	FIRST TERM		
1	**Introduction To Wireless Communication Systems:** Evolution of mobile radio communications; examples of wireless communication systems; paging systems; Cordless telephone systems; overview of generations of cellular systems, comparison of various wireless systems.	3	
2	**Introduction to Personal Communication Services (PCS):** PCS architecture, Mobility management, Networks signaling. A basic cellular system, multiple access techniques: FDMA, TDMA, CDMA.	3 2	
3	**Introduction to Wireless Channels and Diversity:** Fast Fading Wireless Channel Modeling, Rayleigh/Ricean Fading Channels, BER Performance in Fading Channels, Introduction to Diversity modeling for Wireless Communications	2	
4	**2G Networks:** Second generation, digital, wireless systems: GSM, IS_136 (D-AMPS), IS-95 CDMA. *Global system for Mobile Communication (GSM)* : system overview: GSM Architecture, Mobility Management, Network signaling, mobile management, voice signal processing and coding.	3 3	
5	**Spread Spectrum Systems-** Cellular code Division Access Systems-Principle, Power Control, effects of multipath propagation on code division multiple access.	2	
	SECOND TERM		
6	**2.5G Mobile Data Networks:** Introduction to Mobile Data Networks. *General Packet Radio Services (GPRS):* GPRS architecture, GPRS Network nodes, EDGE, Wireless LANs, (IEEE 802.11), Mobile IP.	3 3	
7	**Third Generation (3G) Mobile Services:** Introduction to International Mobile Telecommunications 2000 (IMT 2000) vision Wideband Code Division Multiple Access (W-CDMA), and CDMA 2000, Quality of services in 3G, Introduction to 4G.	2 2	
8	**Wireless Local Loop (WLL):** Introduction to WLL architecture, WLL technologies. Wireless personal area networks (WPAN): Blue tooth, IEEE 802.15, architecture, protocol stack. Wi-Max, Introduction to Mobile Adhoc Networks.	2 3	
9	**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.
[R4] Lee, W.C.Y., “Mobile Cellular Telecommunication”, 2nd Edition, McGraw Hill,1998.
[R5] Smith & Collins, “3G Wireless Networks,” TMH, 2007
[R6] Schiller, Jochen, “Mobile Communications”, 2nd Edition, Addison Wesley