Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
ITC704	Wireless Technology	4	-	-	4	-	-	04
		Examination Scheme						
		ISE	MSE		ESE			
		10	30		100 (60% Weightage)			

Pre-requisite Course Codes	Computer Networks	
After successful completion of the course, student will be able to:		
Course Outcomes	CO1	Identify the characteristics/ fundamentals of Wireless communication Channel.
	CO2	Discuss various new trends in wireless communication and their technologies.
	CO3	Generalize various protocols and topologies used in new wireless communication technologies.
	CO4	Associate the need of security and economics in wireless system.

Module No.	Topics	Ref.	Hrs.
1	**Fundamentals of wireless Communication** • Fundamentals of Wireless Communication Advantages, Limitations and Applications Wireless Media. • Infrared Modulation Techniques DSSS And FHSS • Multiple access technique: TDMA, CDMA, FDMA, CSMA, OFDMA [fundamentals] Frequency Spectrum • Radio and Infrared Frequency Spectrum	3,4	08
2	**Wireless technology** • The cellular concepts: Frequency Reuse, Channel assignment strategies, Hand off strategies Interference and System Capacity [Design problems]. • Evolution of cellular networks 1G, 2G,3G,4G • GSM: System Architecture, Radio Subsystem, Channel Types, GSM frame structure • CDMA: Architecture, Frequency and channel specifications, forward and Reverse CDMA Channels.	2,3	10
3	**Wireless in local loop(WLL)** User requirements of WLL systems, WLL system Architecture, MMDS, LMDS, WLL subscriber terminal, WLL interface to the PSTN	1,3	04

4	**Wireless local area networks(WLAN)** Introduction, WLAN Equipment, WLAN topologies and Technologies, IEEE802.11WLAN :Architecture, Physical Layer, Data Link Layer, MAC Layer, Security Latest developments of IEEE 802.11 standards.	3,4	08
5	**Wireless personal area networks(WPAN)** Introduction, WPAN technologies and Protocols, Bluetooth(802.15.1)[Protocol stack and network connection establishment, security aspects] HR –WPAN (UWB)(IEEE 802.15.3) LR-WPAN (IEEE 802.15.4) Zigbee [Stack architecture, components , Network Topologies , Applications] Wireless Sensor networks [Network model and protocol stack , routing algorithms, application]	3,4	08
6	**Wireless metropolitan area networks** IEEE 802.16 [Protocol Architecture] IEEE 802.16a[Wimax] Wimax and LTE/3GPP comparison	1,3,4	04
7	**Security issues in Wireless Systems** The need, attacks , security services, Wired Equivalent Privacy protocol(WEP),Mobile IP, VPN[PPTP,L2TP,IPSec]	3,4	03
8	**Economies of Wireless Network** Economic Benefits, Economics of Wireless industry Wireless data forecast, charging issues.	3,4	03
	Total hours of instructions		48

References:

1. Nicopolitidia , M.S. Obaidat, GI Papadimitriou*," Wireless Networks* ",Wiley India(student edition2010)
2. TL Singal ,"*Wireless communications*", TataMc Graw Hill Education private Ltd.(edition2011)
3. Dr. Nupur Prasad Giri ," *Wireless Technology*", Dream tech Press.
4. Dr. Sunil Kumar S.Manvi &Mahabaleshwar S. Kakkasageri," *Wireless and Mobile Networks*",