Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
MCA502	Wireless & Mobile Technology	4	-	--	4	-	--	4
		Examination Scheme						
		ISE	MSE		ESE			
		10	30		100 (60% Weightage)			

Pre-requisite Course Codes		Networking, Computer Networks
Course Outcomes		Students will be able to
	CO1	To describe the fundamental components of wireless communication.
	CO2	To compare various techniques used for medium access in wireless communication.
	CO3	To Classify Mobile Network Layer and Mobile Transport Layer.
	CO4	To Evaluate various wireless LAN standards and telecommunication system procedures

Module No.	Unit No.	Topics	Ref.	Hrs.
1		**Introduction To Wireless Technology :**	1	5
	1.1	Mobile and wireless communications		
	1.2	Applications, history, market vision, overview Frequency of Radio Transmission		
	1.3	Signal Antennas, Signal Propagation		
	1.4	Multiplexing, Modulation, SpreadSpectrum		
	1.5	Coding and Error Control (Convolution Codes)		
2		**Wireless Communication :**	2	6
	2.1	Cellular systems- Frequency Management and Channel Assignment		
	2.2	Dropped call rates & their evaluation		
	2.3	CDMA – FDMA – TDMA – CSDMA		
	2.4	Generations of Cellular Networks 1G,2G		
	2.5	2.5G,3G and 4G		
3		**Wireless Lan :**	2	8
	3.1	IEEE 802.11,		
	3.2	WiFi,		
	3.3	IEEE 802.16		
	3.4	Bluetooth, WIMAX		
	3.5	Standards– Architecture – Services		
4		**Mobile Communication Systems :**	1	8
	4.1	GSM-architecture-Location tracking and call setup-		
	4.2	Mobility management- Handover-Security-GSM SMS		
	4.3	International roaming for GSM- call recording functions-		

		subscriber and service data mgt -		
	4.4	Mobile Number portability - VoIP service for Mobile Networks		
	4.5	GPRS – Architecture-GPRS procedures-attach and detach procedures-		
	4.6	PDP context procedure-		
	4.7	combined RA/LA update procedures-Billing		
5		**Mobile Network Layer**	1	6
	5.1	Mobile IP		
	5.2	Dynamic Host Configuration Protocol		
	5.3	Mobile Ad Hoc Routing Protocols–		
	5.4	Multicast routing		
6		**Mobile Transport Layer :**	1	6
	6.1	TCP over Wireless Networks		
	6.2	Indirect TCP ,Snooping TCP		
	6.3	Mobile TCP , Fast Retransmit / Fast Recovery Transmission Timeout Freezing		
	6.4	Selective Retransmission		
	6.5	Transaction OrientedTCP		
	6.6	TCP over 2.5 / 3G wireless Networks		
7		**Application Layer :**	1,2,8	6
	7.1	WAP Model		
	7.2	Mobile Location based services		
	7.3	WAPGateway , WAP protocols		
	7.4	WAP user agent profile		
	7.5	Caching model-wireless bearers for WAP, WML		
	7.6	WMLScripts – WTA - iMode- SyncML		
			Total	**45**

References:
[1] Jochen Schiller, "Mobile Communications", Second Edition, Pearson Education
[2] William Stallings, "Wireless Communications and Networks", Pearson Education
[3] Vijay Garg, "Wireless network evolution: 2G to 3G", Prentice Hall, 2002.

[4] MISRA "Wireless Communication and Networks: 3G and Beyond", McGraw Hill
[5] Melizza Othman "Principles of mobile computing and mobile communications", CRCpress
[6] Matthew Gast "802.11 Wireless Networks: The Definitive Guide", 2nd Edition, O'Reilly
[7] Ivan Stojmenovic "Handbook of Wireless Networks and Mobile Computing", Wiley India
[8] Yi-Bing Lin "Wireless and Mobile Network Architectures", ImrichChlamtac
[9] Dr. Sunilkumar S. Manvi S. Kakkasageri "Wireless and Mobile Networks: Concepts and Protocols"