



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
EXC8042	Mobile Communication	4	--	--	4	--	--	4
		Examination Scheme						
		ISE		MSE	ESE			
		10		30	100 (60% Weightage)			

Pre-requisite Course Codes		EXC 704: Computer Communication Networks EXC: Digital Communication
After successful completion of the course, student will be able to		
Course Outcomes	CO1	Identify the blocks of cellular communication system
	CO2	Compare GSM and CDMA standards
	CO3	Explain 3G mobile communication system
	CO4	Identify the requirements of 4G standards
	CO5	Discuss emerging technologies

Module No.	Unit No.	Topics	Ref.	Hrs.
1		Cellular Communication System		10
	1.1	Introduction to Cellular Communications, Frequency reuse, Multiple Access Technologies	1,2	
	1.2	Cellular Processes: Channel assignment, Call Setup, Handoff strategies, interferences and system capacity	1	
	1.3	Traffic Theory: Trunking and grade of service, improving system capacity	1	
2		GSM		08
	2.1	GSM Network architecture, signaling protocol architecture, identifiers, channels, Frame structure, speech coding, authentication and security, call procedure, handoff procedure, services and features	1	
3		CDMA digital cellular standard (IS-95).		08
	3.1	Frequency and channel specifications of IS-95, forward and reverse CDMA channel, packet and frame formats, mobility and radio resource management	1	
4		3 G Mobile Communication System		10
	4.1	2.5 G TDMA Evolution Path, GPRS, EDGE , 2.5G CDMA one cellular N/W, Need of 3G Cellular N/w, IMT 2000 Global Standard, UMTS Technology, W-CDMA Air interface, TD-SCDMA Technology, CDMA 2000 Cellular Technology	4	
5		4G Wireless Standards		08
	5.1	Need for 4G network, difference between 3G and 4G, LTE, WiMAX	4	
6		Emerging Technologies		08
	6.1	Mobile Adhoc Network, Mobile IP and Mobility Management, Mobile TCP, Wireless Sensor Networks, RFID Technology	4	
Total				52



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References:

- [1] Wireless Communications - Theodore S. Rappaport, Prentice Hall of India, PTR publication
- [2] Mobile & Personal Communication system & Services by Raj Pandya , Prentice –Hall of India (PHI) Private Limited
- [3] Principles of Wireless Networks-KavehPahlavan, Prashant Krishnamurthy, PHI
- [4] Wireless communication and Networking-Vijay Garg, ELSEVIER Inc
- [5] Wireless communication- Singhal_TMH
- [6] Fundamentals of Wireless Communications, “David Tse and Pramod Viswanath, Publisher, Cambridge University Press.
- [7] Wireless Communications: Andrea Goldsmith, Cambridge University Press.