

Module No.	Unit No.	Topics	Hrs.
1.0		Fundamentals of Mobile Communication	08
	1.1	Introduction to wireless communication: Mobile radio telephony, Examples of Wireless Communication Systems, Related design problems.	
	1.2	The Cellular Concept System Design Fundamentals: Frequency Reuse, Channel Assignment Strategies, Interference and System Capacity, Trunking and Grade of Service, Improving Coverage and Capacity in Cellular Systems	
2.0		Mobile Radio Propagation	08
	2.1	Large scale fading: Free space propagation model, the three basic propagation mechanisms, reflection, ground reflection (two-ray) model, diffraction, scattering, practical Link budget design using path loss models	
	2.2	Small scale fading: Small scale multipath propagation, parameters of mobile multipath channels, types of small-scale fading, Rayleigh and Ricean distributions.	
	2.3	Features of all conventional multiple access techniques: Frequency division multiple access(FDMA), time division multiple access(TDMA),space spectrum multiple access (SSMA), space division multiple access (SDMA),OFDM-PAPR,OFDMA	
3.0		2G Technologies	10
	3.1	GSM: GSM Network architecture, GSM signalling protocol architecture, identifiers used in GSM system, GSM channels, frame structure for GSM, GSM speech coding, authentication and security in GSM, GSM call procedures, GSM hand-off procedures, GSM services and features	
	3.2	GSM evolution: GPRS And EDGE- architecture, radio specifications, channels.	
	3.3	IS-95: Architecture of CDMA system, CDMA air interface, power control in CDMA system, power control, handoff, rake receiver	
4.0		3G Technology	06
	4.1	UMTS: Objectives, standardisation and releases, network architecture, air interface specifications, channels, security procedure, W-CDMA air interface, attributes of W-CDMA system, W-CDMA channels	
	4.2	Cdma2000 cellular technologies: Forward And Reverse Channels, Handoff And Power Control.	
5.0		3GPP LTE	08