LESSON PLAN

Faculty	Harish Kumar
Discipline	Electronics & Communication Engg.
Semester	6th
Subject	Wirless & Mobile Communication
Lesson Plan Duration	16 WEEKS(From 15-02-2024 to 12-06-2024)
Work Load (Lecture) / Practical per week (in hours)	Theory - 04, Practical - 03

Week	**Theory**		**Practical**	
	Lect. Day	**Topic**	**Practical Day**	**Topic**
1st	1st	Basics of Wireless Communication	1st (3 Hours)	Introduction to wireless & Mobile communication and systems
	2nd	Advantages of wireless communication		
	3rd	Electromegnetic waves		
	4th	Frequency Spectrum used		
2nd	1st	Cellular Telephone System	2nd (3 Hours)	Study the features, specification and working of cellular mobile
	2nd	Propagation considerations like a) Range b) Atmospheric Effect c) Geographic Effect		
	3rd	d) Fading e) Doppler Effect f) Multipath Effect		
	4th	Revision, Assginment of Unit - 1		
3rd	1st	Introduction to 1G and 2G	3rd (3 Hours)	Signal strength measurement of various points from a transmitting antenna/cordless
	2nd	Cell area Cell Site Structure		

	3rd	Capacity of cell		phone
	4th	Frequency Reuse (Concept)		
4th	1st	Interference (Co-channel, Adjacent channel)	4th (3 Hours)	Observing call processing of GSM trainer kit
	2nd	2.7 Power Control for reducing Interference		
	3rd	Fundamentals of cellular network planning a) Coverage planning b) Capacity planning c) Cell splitting and sectoring		
	4th	Sessional-1		
5th	1st	Introduction to Multiple Access.	5th (3 Hours)	Visit of a Mobile Switching Centre (MSC) in the nearest M.S. Facility provider
	2nd	Frequency Division Multiple Access (FDMA)		
	3rd	3.3. Time Division Multiple Access (TDMA)		
	4th	Distinction between TDMA FDD and TDMA TDD		
6th	1st	Code Division Multiple Access (CDMA),	6th (3 Hours)	Demonstration of Base Trans Receiver (BTS) with nearby cellular tower
	2nd	Frequency hopping CDMA		
	3rd	WCDMA		
	4th	Comparison between TDMA and FDMA		
7th	1st	Comparison between CDMA and WCDMA	7th (3 Hours)	Observing call processing of GSM trainer Kit
	2nd	Revision, Assignment of Unit - 3		
	3rd	Introduction of Global Systems for Mobile Communication (GSM)		
	4th	(GSM) architecture		
8th	1st	Introduction of CDMA System,	8th (3 Hours)	Demonstration of data transfer using Bluetooth
	2nd	Comparison of CDMA and GSM Systems		

	3rd	Introduction of GPRS		
	4th	EDGE		
9th	1st	Bluetooth	9th (3 Hours)	Observing call processing of CDMA trainer Kit
	2nd	Wi-fi.		
	3rd	Features of CDMA		
	4th	Revision, Assignment of Unit- 4		
10th	1st	Test of Unit - 3 & 4	10th (3 Hours)	To set up aWi-fi network
	2nd	Frequency Hopping Spread Spectrum (FHSS)		
	3rd	Comparison of FDMA/TDMA/CDMA		
	4th	Spread Spectrum Multiple Access (SSMA)		
11th	1st	Introduction to 3G & 4G	11th (3 Hours)	Pairing of two devices using Bluetooth
	2nd	Introduction to Architecture of UMTS		
	3rd	Features of UMTS		
	4th	HSPA (High Speed Packet Access).		
	5th	Features of LTE (Long Term Evolution).		
12th	1st	Architecture of LTE (Long Term Evolution).	12th (3 Hours)	To study faults on a GSM mobile trainer
	2nd	Revision, Assignment of unit - 5		
	3rd	Assembling of GSM phone		
	4th	Dissembling of GSM phone		
13th	1st	Study parts of Mobile Phone	13th (3 Hours)	Data transfer using Wi-Fi
	2nd	Testing of various parts		

	3rd	Troubleshooting GSM Mobile Phone		
	4th	Revision, Assignment of unit - 6		
14th	1st	Test of Unit - 5 & 6	14th (3 Hours)	Visit to Mobile Switching Centre
	2nd	Revision, Assignment of unit - 1		
	3rd	Revision, Assignment of unit - 1		
	4th	Revision, Assignment of unit - 2		
15th	1st	Revision, Assignment of unit - 2	15th (3 Hours)	Value aided experiments
	2nd	Revision, Assignment of unit - 3		
	3rd	Revision, Assignment of unit - 3		
	4th	Revision, Assignment of unit - 4		
16th	1st	Revision, Assignment of unit - 4	15th (3 Hours)	Value aided experiments
	2nd	Revision, Assignment of unit - 5		
	3rd	Revision, Assignment of unit - 6		
	4th	Revision, Assignment of unit - 6		