

Lesson Plan

Name of faculty: Bharti, Lecturer

Discipline : ECE

Semester : 5th

Subject: WMC

Lesson Plan Duration: (16 weeks)

Work Load (L& P) per week (in Hours): Lectures- 03, Practical - 04

Week	Theory		Practical	
	Lecture day	Topic (Including assignment/ test)	Week	Topic
1 st	1	Basics of wireless communication	1 st	Study the features, specification and working of cellular mobile
	2	Advantages of wireless communication		
	3	Electromagnetic waves		
	3	Frequency Spectrum used		
2 nd	4	Cellular Network Systems	2 nd	Study the features, specification and working of cellular mobile
	5	Propagation considerations: a) Range b) Atmospheric Effect c) Geographic Effect		
	6	d) Fading		
	6	e) Doppler Effect, f) Multipath Effect		
3 rd	7	Cellular Concept	3 rd	Measurement of Signal strength at various points from a transmitting antenna
	8	Introduction to 1G and 2G		
	9	Cell area, Cell Site Structure		
	9	Capacity of cell		
4 th	10	Frequency Reuse (Concept)	4 th	Measurement of Signal strength at various points from a transmitting antenna
	11	Interference (Co-channel)		
	12	Interference (Adjacent channel)		
	12	Power Control for reducing Interference		
5 th	13	Fundamentals of cellular network planning	5 th	Observing call processing of GSM trainer kit.
	14	a) Coverage planning		
	15	b) Capacity splitting		
	15	c) cell splitting and Sectoring		
6 th	16	Assignment/Revision	6 th	Observing call processing of GSM trainer kit.
	17	1 st Sessional		
	18	Multiple Access Techniques for Wireless Communication		
	18	Introduction to Multiple Access.		
7 th	19	Frequency Division Multiple Access (FDMA)	7 th	Demonstration of Base Trans Receiver (BTS) with nearby cellular tower.
	20	Frequency Division Multiple Access (FDMA)		
	21	Time Division Multiple Access (TDMA)		
	21	Time Division Multiple Access (TDMA)		
8 th	22	Distinction between TDMA FDD and TDMA TDD	8 th	Demonstration of Base Trans Receiver (BTS) with nearby cellular tower.
	23	Code Division Multiple Access (CDMA)		

	24	Code Division Multiple Access (CDMA)		
	24	WCDMA		
G	25	WCDMA	9 th	Visit to mobile Switching Centre.
	26	Mobile Communication Systems		
	27	Introduction of Global Systems for Mobile Communication (GSM)		
	27	and its Architecture		
10 th	28	Introduction of CDMA System	10 th	Visit to mobile Switching Centre.
	29	Comparison of CDMA and GSM Systems		
	30	Introduction of GPRS		
	30	Introduction of GPRS		
11 th	31	EDGE	11 th	Troubleshooting of a GSM mobile phone.
	32	Bluetooth		
	33	Wi-Fi		
	33	Assignment/ Revision		
12 th	34	2 nd Sessional	12 th	Troubleshooting of a GSM mobile phone.
	35	Introduction to 3G & 4G		
	36	Introduction to 5G		
	36	Introduction to Architecture of UMTs		
13 th	37	Features of UMTS	13 th	To study and Demonstration of AT commands of GSM system using trainer kit
	38	Introduction to Architecture of UMTs		
	39	Features of UMTS		
	39	Features of LTE (Long Term Evolution).		
14 th	40	Architecture of LTE (Long Term Evolution).	14 th	To study and Demonstration of AT commands of GSM system using trainer kit
	41	Introduction to 5G		
	42	Architecture of 5G		
	42	Features of 5 G		
15 th	43	Advantages of 5G	15 th	Study of LTE mobile communication usingtrainer kit.
	44	Disadvantages if 5G		
	45	Goals of 5G		
	45	Comparision of 4G and 5G		
16 th	46	Assignment/ Revision	16 th	To study and Demonstration of AT commands of LTE using trainer kit.
	47	3 rd Sessional		
	48	Revision		
	48	Revision		