

LESSON PLAN

Name of the Faculty : **Suresh Jindal**

Discipline : **ELECTRONICS & COMMUNICATION ENGINEERING**

Semester : **3rd**

Subject : **ANALOG AND DIGITAL COMMUNICATION**

Lesson Plan Duration : **15 weeks**

Work Load (Lecture/ Practical) per week (in hours): Lectures-03, Practicals-04

Week	Theory		Practical	
	Lecture Day	Topics (including Assignments/Tests)	Practical Day	Topic
1 st	1 st	Introduction of Analog Communication	1 st	Introduction of Analog Communication, Components/sub-components of a Communication Practical kits
	2 nd	Need for modulation, frequency translation		
	3 rd	Demodulation in communication systems		
2 nd	4 th	Basic scheme of a modern communication system	2 nd	Introduction of Analog Communication, Components/sub-components of a Communication Practical kits
	5 th	Derivation of expression for an amplitude modulated wave		
	6 th	Carrier and side band components		
3 rd	7 th	Modulation index. Spectrum and BW of AM Wave	3 rd	Observe wave forms at input and output of pulse code modulator with CRO
	8 th	Relative power distribution in carrier and side bands		
	9 th	Elementary idea of DSB-SC, SSB-SC		
4 th	10 th	ISB and VSB modulations, their comparison, and areas of applications, Revision	4 th	To observe an AM wave on CRO produced by a standard signal generator using internal and external modulation
	11 th	Expression for frequency modulated wave and its frequency spectrum (without Proof and analysis of Bessel function)		
	12 th	Modulation index, maximum frequency deviation ratio		
5 th	13 th	BW of FM signals, Carson's rule	5 th	To observe an AM wave on CRO produced by a standard signal generator using internal and external modulation
	14 th	Effect of noise on FM carrier, Noise triangle		
	15 th	Role of limiter, Need for pre-emphasis and de-emphasis		
6 th	16 th	Capture effect	6 th	To measure the modulation index of the wave obtained in above practical
	17 th	Comparison of FM and AM in communication systems		
	18 th	Revision, Assignment and Class Test		
7 th	19 th	Basic block diagram of digital and data communication systems	7 th	To obtain an FM wave and measure the frequency

	20 th	Their comparison with analog communication systems.		deviation for different modulating signals.
	21 st	Sampling theorem and its basic concept. Use of Sampling Theorem		
8 th	22 nd	Introduction to PAM, PPM	8 th	Observe wave forms at input and output of QPSK modulators
	23 rd	Introduction to PWM		
	24 th	Quantization and error of Quantization		
9 th	25 th	PCM, DPCM, their advantage and disadvantages	9 th	Observe wave forms at input and output of PSK modulators
	26 th	Delta Modulation concept of Companding		
	27 th	Adaptive Delta Modulation concept of Companding		
10 th	28 th	Frequency hopping spread spectrum technique	10 th	Observe wave forms at input and output of PSK modulators
	29 th	Revision		
	30 th	Assignment and Class Test		
11 th	31 st	Basic block diagram of Amplitude shift keying (ASK)	11 th	Observe wave forms at input and output of ASK modulators
	32 nd	Principle of working of Amplitude shift keying (ASK)		
	33 rd	Basic block diagram of Interrupted continuous wave (ICW), two tone modulation		
12 th	34 th	Principle of working of Interrupted continuous wave (ICW), two tone modulation	12 th	Observe wave forms at input and output of ASK modulators
	35 th	Basic block diagram of Frequency Shift keying (FSK)		
	36 th	Principle of working of Frequency Shift keying (FSK)		
13 th	37 th	Basic block diagram of Phase shift keying (PSK),	13 th	Observe wave forms at input and output of FSK modulators
	38 th	Principle of working of Phase shift keying (PSK),		
	39 th	Basic block diagram of Quadrature Phase Shift Keying (QPSK)		
14 th	40 th	Principle of working of Quadrature Phase Shift Keying (QPSK)	14 th	Revision and File Checked
	41 st	Revision		
	42 nd	Assignment and Class Test		
15 th	43 rd	Revision	15 th	Viva
	44 th	Revision and Test of whole syllabus and Revision of previous questions papers		
	45 th	Revision and Test of whole syllabus and Revision of previous questions papers		