LESSON PLAN of Analog & Digital Communication

Lesson Plan Duration : JULY 2026 - NOV 2026 Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Theory) + 04HOURS ((PRACTICAL)

Name of the Faculty	Smt .Anshu Bhalla	**Discipline**	Electronics and Communication Engg
Subject	Analog & Digital Communication	**Semester**	IIIrd

Week	Lecture day	Theory		Practical
		Topic (including assignment/ test)		Topic
1st	1	Unit 1. Need for modulation	1	To observe an AM wave on CRO produced by a standard signal generator using internal and external modulation
	2	Frequency translation and demodulation in communication systems	2	
			3	
	3	Basic scheme of a modern communication system	4	
2nd	4	Unit 2. Derivation of expression for an amplitude modulated wave	5	To observe an AM wave on CRO produced by a standard signal generator using internal and external modulation
	5	Carrier and side band components	6	
			7	
	6	Modulation index	8	
3rd	7	Spectrum and BW of AM Wave	9	To measure the modulation index of the wave obtained in above practical
	8	Relative power distribution in carrier and side bands	19	
			11	
	9	Elementary idea of DSB-SC Modulation	12	
4th	10	SSB-SC, ISB Modulation	13	Obtain an FM Wave & measure the frequency deviation for different modulating signals.
	11	VSB modulations	14	
			15	
	12	DSB-SC, SSB-SC, ISB and VSB modulations Applications	16	

Week	Lecture day	Theory		Practical
		Topic (including assignment/ test)		Topic
5th	13	Assignment 1	17	Viva-Voce
	14	Revision of chapter 1	18	
			19	
	15	1st Sessional Exam	20	
6th	16	Unit 3. Expression for frequency modulated wave and its frequency spectrum, Modulation index	21	Observe wave forms at input and output of pulse code modulator with CRO
	17	Maximum frequency deviation and deviation ratio, BW of FM signals	22	
			23	
	18	Carson's rule, Effect of noise on FM carrier. Noise triangle	24	
7th	19	Role of limiter, Need for pre-emphasis and de-emphasis	25	REVISION
	20	Capture effect, Comparison of FM and AM in communication systems	26	
			27	
	21	Unit 4. Basic block diagram of digital and data communication systems. Their comparison with analog communication systems	28	
8th	22	Sampling theorem and its basic concept (Assignment 2)	29	Observe wave forms at input and output of QPSK modulators
	23	Introduction to PAM, PPM, PWM	30	
			31	
	24	Quantization and error of Quantization	32	

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		Topic (including assignment/ test)		Topic
9th	25	PCM,DPCM,their advantage &disadvantage	33	Viva-Voce
	26	DELTA Modulation	34	
			35	
	27	ADAPTIVE DELTA Modulation	36	
10th	28	concept of COMPANDING	37	Observe wave forms at input and output of ASK modulators
	29	FHSS Technique	38	
			39	
	30	2nd Sessional Test	40	
11th	31	Unit 5. Basic block diagram of Amplitude Shift Keying (ASK)	41	REVISION
	32	Interrupted continuous wave (ICW)	42	
			43	
	33	Two tone modulation	44	
12th	34	Frequency Shift Keying (FSK)	45	Observe wave forms at input and output of FSK modulators
	35	Phase Shift Keying (PSK)	46	
			47	
	36	Quadrature Phase Shift Keying (QPSK)	48	

Week	Lecture day	Theory		Practical
		Topic (including assignment/ test)		Topic
13th	37	Class test	49	REVISION
	38	Revision for 3rd sessional exam	50	
			51	
	39	3rd Sessional Test	52	
14th	40	Revision	53	Observe wave forms at input and output of PSK modulators
	41	Revision	54	
			55	
	42	Revision	56	
15th	43	Revision	57	VIVA- VOCE
	44	Revision	58	
			59	
	45	Revision	60	