Lesson Plan

Name of the Faculty : **Er. Monika Sharma** (Theory/Practical)

Discipline : Electronics and Communication Engineering

Semester : 6th

Subject : Digital Communication (ECE-306N)

Digital Communication Lab (ECE-314N)

Lesson Plan Duration : 15 weeks (from January, 2020 to April, 2020)

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

Week	Theory		Practical	
	Lecture Day	**Topic (including assignment / test)**	**Practical Day**	**Topic**
1st	1st	Model of Digital Communication System, Sampling Theorem	1st	1.(a) To study Pulse Code Modulation (Sample and Hold, Quantization and Encoding using ADC) (b) To study the basic characteristics of Low pass Filter, High Pass Filter
	2nd	Sampling for baseband and bandpass signals,Natural and Flat top sampling		
	3rd	Signal recovery and holding		
2nd	4th	Quantization of signal and quantization error	2nd	
	5th	Source coding, Companding		
	6th	Noise in PCM System		
3rd	7th	DPCM, ADPCM	3rd	2. To study Frequency Shift Keying (FSK), and comparison with the basic characteristics of AM, FM Modulation
	8th	APCM, Delta Modulation		
	9th	Adaptive Delta Modulation		
4th	10th	Comparison of PCM, DPCM and DM, Quantization Noise	4th	
	11th	Assignment-1/ Class Test		
	12th	Inter-symbol interference		
5th	13th	Calculation of output signal power	5th	3. To study Amplitude Shift Keying
	14th	Time division multiplexed systems		
	15th	Effect of thermal noise		
6th	16th	O/P Signal to noise ratio in PCM, Quantization noise in DM	6th	4.To study and verify Delta Modulation Techniques
	17th	O/P Signal to quantization noise ratio in DM		
	18th	Matched Filter and its properties		

7th	19th	Average probability of symbol error in binary enclosed PCM receiver	7th	5.To study Phase Shift Keying (PSK)
	20th	Nyquist criterion for distortionless base band binary transmission		
	21st	Ideal Nyquist Channel, Raised cosine spectrum		
8th	22nd	Tapped delay line equalization, Adaptive equalization Correlative level coding, Duo- binary Signalling	8th	Viva – Voce -1
	23rd	LMS algorithm, Eye pattern		
	24th	Assignment-2/ Class Test		
9th	25th	Introduction to Information, Entropy	9th	6.Setting up a Fiber Optic Analog Link
	26th	Entropy, Coding Techniques		
	27th	Huffman Coding,		
10th	28th	Channel Capacity	10th	7. Setting up a Fiber Optic Digital Link
	29th	Linear Block Codes		
	30th	Channel Coding		
11th	31st	Matrix Description	11th	Viva Voce-2
	32nd	Syndrome Decoding, Hamming Code		
	33rd	Cyclic Codes		
12th	34th	Convolution Codes and its generation	12th	8.Losses in Optical Fiber (a) Propagation Loss (b)Bending Loss
	35th	Viterbi decoding		
	36th	Assignment-3/ Class Test		
13th	37th	Pass band transmission model, gram Schmidt orthogonalization procedure	13th	9.To Verify Measurement of Numerical Aperture 10.To Study Time Division Multiplexing of signals
	38th	Geometric Interpretation of signals		
	39th	Response of bank of correlaters to noise input, Detection of known signal in noise		
14th	40th	Hierarchy of digital modulation techniques, BPSK, DPSK, DEPSK	14th	
	41st	QPSK,ASK,QASK		
	42nd	FSK,M-ary FSK, MSK,		
15th	43rd	M-ary QAM, Signal space diagram	15th	Viva Voce-3

	44th	Effect of intersymbol interference, synchronization		
	45th	Assignment-4/ Class Test		

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