

Lecture Plan

Name of Subject: Communication System

Subject Code: EC-210C

Class: BTech ECE

Semester: 4th

Unit/Section No.	Name of Topic	Number of Lectures Required
Unit1: Introduction to Communication Systems	(i)Essential of a communication systems, Modes and media's of communication.	1
	(ii) Classification of signals and systems	2
	(iii)Fourier analysis of signal (a) Fourier series (b) Fourier Transform and their properties	3
Unit2: Amplitude Modulation	(i) Basic definition of modulation, Need of modulation	1
	(ii)Amplitude modulation and their mathematical expression	1
	(iii)Generation of AM waves and demodulation of AM waves	3
	(iv)DSB-SC signal generation of DSBSC waves, Coherent detection of DSBSC signal	2
	(v)Single side band modulator, generation of SSB wave, demodulation of SSB wave, Vestigial side band modulation	2
Unit3: Angle Modulation	(i) Basic definitions: Phase modulation and frequency modulation, Mathematical expression of FM and PM	2
	(ii) Narrow band frequency modulation and wide band frequency modulation, transmission BW of FM	3
	(iii) Generation of FM wave	2
	(iv) Demodulation of FM waves	2
Unit4: Pulse Modulation	(i)Sampling theorem	2
	(ii)Sampling techniques	1
	(iii) Pulse amplitude modulation, pulse time modulation	1

	(iv) Elements of pulse code modulation	1
	(v) Quantization, uniform and nonuniform quantization, necessity of nonuniform quantization	2
	(vi) A and μ law of companding	1
	(vii) Quantization error in PCM, transmission BW of PCM	1
	(viii) Differential pulse code modulation, Delta modulation, Adaptive delta modulation	2
	(ix) TDM, FDM	1
Unit5: Digital Modulation Techniques	(i) ASK, FSK, BPSK, their generation and detection	2
	(ii) QPSK generation and detection, DPSK, M-ary PSK	2
Unit6: Introduction to Noise	External noise, internal noise, S/N ratio, noise figure, noise temperature	3