

**Department of Electronics & Telecommunication Engineering**  
**Lecture Plan**

**Subject Code: EC25567**

**Subject Name: Analog and Digital Communication**

**Session: Jan-May 2024 Semester: VI**

<b>Lecture No.</b>	<b>Topic to be cover</b>
1.	Review of Fourier transform, its properties, probability, random variable and random process and power spectral density.
2.	Need of modulation, Generation and detection of AM
3.	Generation and detection of DSB-SC
4.	Generation and detection of SSB-SC
5.	Frequency division multiplexing
6.	Noise and its classification and noise in amplitude modulation systems
7.	Instantaneous frequency, Phase and Frequency modulation, and NBFM
8.	Wideband FM, bandwidth of angle modulated signals
9.	Generation and detection of angle modulated signals
10.	Stereophonic FM broadcasting. Pre-emphasis and De-emphasis filters
11.	TRF and Super heterodyne radio receiver
12.	Noise in Frequency modulation systems. Threshold effect in angle modulation
13.	Sampling process. Sampling of bandpass signals
14.	Quantization, Pulse Amplitude and Pulse code modulation (PCM)
15.	Differential pulse code modulation (DPCM)
16.	Delta modulation (DM), Adaptive Delta modulation (ADM)
17.	Line codes and their PSD
18.	Noise considerations in PCM, Time Division multiplexing
19.	Inter symbol Interference and Nyquist criterion,
20.	Equalization Techniques, Eye patterns
21.	Geometric representation of signals
22.	Optimum detection of signals in noise
23.	Optimum receivers using coherent detection for AWGN channels

24.	Probability of Error
25.	Phase Shift Keying (PSK)
26.	Frequency Shift Keying (FSK)
27.	Quadrature Amplitude Modulation (QAM)
28.	Minimum Shift Keying (MSK), their generation, detection
29.	PSD and Probability of Error evaluations
30.	Comparison of Digital Modulation schemes using a single carrier.