

# Lesson Plan

Name of the Institute :	CV RAMAN POLYTECHNIC
Department :	ELECTRONICS AND TELECOMMUNICATION
Semester/Division/Branch :	5TH/E & TC
Subject Name with code :	ANALOG & DIGITAL COMMUNICATION
Total No. of Class (Required) :	60
Faculty Name :	PRIYABRATA DASH


Class No.	Brief Description of the Topic/Chapter to be taught	Remark
1	Unit-1: Elements of Communication Systems.	
2	Communication Process- Concept of Elements of Communication System & its Block diagram	
3	Source of information & Communication Channels.	
4	Classification of Communication systems ( Line & Wireless or Radio)	
5	Modulation Process, Need of modulation and classify modulation process	
6	Analog and Digital Signals & its conversion.	
7	Basic concept of Signals & Signals classification (Analog and Digital)	
8	Bandwidth limitation	
9	Doubt Class	
10	Unit-2: Amplitude (linear) Modulation System	
11	Amplitude modulation & derive the expression for amplitude modulation signal, power relation in AM wave & find Modulation Index	
12	Generation of Amplitude Modulation(AM)- Linear level AM modulation only	
13	Demodulation of AM waves (liner diode detector, square law detector & PLL)	
14	Explain SSB signal and DSBSC signal	
15	Methods of generating & detection SSB-SC signal (Indirect method only)	
16	Methods of generation DSB-SC signal and detection of DSB-SC signal (Synchronous detection)	
17	Concept of Balanced modulators	
18	Doubt Class	
19	Vestigial Side Band Modulation	
20	Unit-3: Angle Modulation Systems.	
21	Concept of Angle modulation & its types (PM & FM)	
22	Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal.	
23	Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal	
24	Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram	
25	Compare between AM and FM modulation (Advantages & Disadvantages)	



Class No.	Brief Description of the Topic/Chapter to be taught	Remark
26	Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram	
27	Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principle with Block Diagram	
28	Doubt Class	
29	Unit-4: AM & FM TRANSMITTER & RECEIVER	
30	Classification of Radio Receivers	
31	Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure	
32	AM transmitter - working principle with Block Diagram	
33	Concept of Frequency conversion, RF amplifier & IF amplifier , Tuning, S/N ratio	
34	Working of super heterodyne radio receiver with Block diagram	
35	Working of FM Transmitter & Receiver with Block Diagram.	
36	Doubt Class	
37	Unit-5: ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM.	
38	Concept of Sampling Theorem , Nyquist rate & Aliasing	
39	Sampling Techniques ( Instantaneous, Natural, Flat Top)	
40	Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above	
41	Concept of Quantization of signal & Quantization error.	
42	Generation & Demodulation of PCM system with Block diagram & its applications.	
43	Companding in PCM & Vocoder	
44	Time Division Multiplexing & explain the operation with circuit diagram.	
45	Generation & demodulation of Delta modulation with Block diagram.	
46	Generation & demodulation of DPCM with Block diagram.	
47	Comparison between PCM, DM , ADM & DPCM	
48	Doubt Class	
49	Unit-6: DIGITAL MODULATION TECHNIQUES.	
50	Concept of Multiplexing (FDM & TDM)- ( Basic concept , Transmitter & Receiver) & Digital modulation formats.	
51	Advantages of digital communication system over Analog system	

Class No.	Brief Description of the Topic/Chapter to be taught	Remark
52	Digital modulation techniques & types.	
53	Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK.	
54	Working of T1-Carrier system.	
55	Spread Spectrum & its applications	
56	Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS).	
57	Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems)	
58	Application of Different Modulation Schemes.	
59	Types of Modem & its Application	
60	Doubt Class	

  
 Sign. of Faculty

  
 Sign. of H.O.D