

C.V. RAMAN POLYTECHNIC BBSR




LESSON PLAN

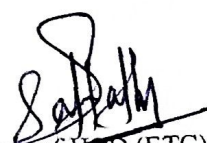
Discipline: Diploma Branch: ETC	Semester: 4 TH	Name of the Teaching Faculty: Sabyasachi Patra
Subject: Analog and Digital Communication (ETCPC 204)	No. of Days/per week class allotted: 45 days/ 3 class per week	Semester From Date: 22/12/2025 To Date: 18/04/2026 No. of Weeks: 15
Week	Class Day	Theory
1 st	1 st	1.1 Communication Process 1.2 Concept of Elements of Communication System & its Block diagram
	2 nd	1.3 Source of information & Communication Channels 1.4 Classification of Communication systems
	3 rd	1.5 Modulation Process 1.6 Need of modulation, and classify modulation process
2 nd	1 st	1.7 Analog and Digital Signals & its conversion. 1.8 Basic concept of Signals & Signals classification (Analog and Digital)
	2 nd	1.9 Bandwidth limitation 2.1 Amplitude modulation
	3 rd	2.2 Derive the expression for amplitude modulation signal, power relation in AM wave
3 rd	1 st	2.3 Modulation Index.
	2 nd	2.4 Generation of Amplitude Modulation (AM)- Linear level AM modulation only

	3 rd	2.5 Demodulation of AM waves- Envelope detector
4 th	1 st	2.6 Concept of SSB signal and DSBSC signal
	2 nd	2.7 Concept of Balanced modulators 2.8 Vestigial Side Band Modulation
	3 rd	3.1 Concept of Angle modulation & its types (PM & FM)
5 th	1 st	3.2 Basic principle of Frequency Modulation
	2 nd	3.3 Frequency Spectrum of FM Signal. 3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal
	3 rd	3.4 Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram
6 th	1 st	3.5 Compare between AM and FM modulation (Advantages & Disadvantages)
	2 nd	3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram
	3 rd	3.7 Methods of FM Demodulator or detector (Forster-Seely)
7 th	1 st	4.1 Classification of Radio Receivers
	2 nd	4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure
	3 rd	4.3 AM transmitter - working principle with Block Diagram
8 th	1 st	4.4 Concept of Frequency conversion, RF amplifier & IF amplifier, Tuning, S/N ratio
	2 nd	4.5 Working of super heterodyne radio receiver with Block diagram
	3 rd	4.6 Working of FM Transmitter & Receiver with Block Diagram.
9 th	1 st	5.1 Concept of Sampling Theorem, Nyquist rate & Aliasing

	2 nd	5.2 Sampling Techniques (Instantaneous, Natural, Flat Top)
	3 rd	5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above.
10 th	1 st	5.4 Concept of Quantization of signal & Quantization error.
	2 nd	5.5 Generation & Demodulation of PCM system with Block diagram & its applications. 5.6 Companding in PCM & Vocoder
	3 rd	Class Test/Quiz Test
11 th	1 st	5.7 Time Division Multiplexing & explain the operation with circuit diagram.
	2 nd	5.8 Generation & demodulation of Delta modulation with Block diagram.
	3 rd	5.9 Generation & demodulation of DPCM with Block diagram.
12 th	1 st	5.10 Comparison between PCM, DM, ADM & DPCM
	2 nd	Class Test/Quiz Test
	3 rd	Doubt Clearing Class
13 th	1 st	6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept, Transmitter & Receiver) & Digital modulation formats
	2 nd	6.2 Advantages of digital communication system over Analog system 6.3 Digital modulation techniques & types
	3 rd	6.4 Generation and Detection of binary ASK, FSK, PSK,
14 th	1 st	6.5 Concept of QPSK, QAM, MSK, GMSK
	2 nd	6.6 Working of T1-Carrier system
	3 rd	6.7 Spread Spectrum & its applications

		6.8 Concept of Spread Spectrum Modulation Techniques
15 th	1 st	6.9 Define bit, Baud, symbol & channel capacity formula (Shannon Theorems)
	2 nd	6.10 Types of Modem & its Application Doubt Clearing Class
	3 rd	Previous Year Question Discussion


Signature of Faculty


Signature of HOD (ETC)