


Lesson Plan

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	Discipline: ETC	Semester-4th Summer-2026	Name of the Teaching Faculty: Sri Bibhuti Bhusan Naik(principal)
Sl. No.	Subject-Th.2(ETCPC204) (Analog and Digital Communication)	No. Of Days/Week class alloted:03	Semester From date:-22.12.2025 To date: 18.04.2026 (No of weeks: 15)
	Weeks/Months	Class Day	Topic
1	4Th week 22nd dec To 31th dec	1st	I.Elements of Communication Systems 1.1 Communication Process
		2nd	1.2 Concept of Elements of Communication System & its Block diagram
		3rd	1.3 Source of information & Communication Channels
2	1st week 1st jan To 09th jan	1st	1.4 Classification of Communication systems
		2nd	1.5 Modulation Process
		3rd	1.6 Need of modulation and classify modulation process
3	2nd week 12th jan To 17th jan	1st	1.7 Analog and Digital Signals & its conversion.
		2nd	1.8 Basic concept of Signals & Signals classification (Analog and Digital)
		3rd	1.9 Bandwidth limitation
4	3rd week 19th jan To 22th jan	1st	II.Amplitude (linear) Modulation System
		2nd	2.1 Amplitude modulation
		3rd	2.2 Derive the expression for amplitude modulation signal, power relation in AM wave
5	4th week 27th jan To 31th jan	1st	2.3 Modulation Index.
		2nd	2.4 Generation of Amplitude Modulation (AM)- Linear level AM modulation only
		3rd	2.5 Demodulation of AM waves- Envelope detector
6	1st week 2nd feb To 07th feb	1st	2.6 Concept of SSB signal and DSBSC signal
		2nd	2.7 Concept of Balanced modulators
		3rd	2.8 Vestigial Side Band Modulation
7	2nd week 9th feb To 13th feb	1st	III.Angle Modulation Systems 3.1 Concept of Angle modulation & its types (PM & FM)
		2nd	3.2 Basic principle of Frequency Modulation
		3rd	3.3 Frequency Spectrum of FM Signal.
8	3rd week 16th feb To 21th feb	1st	3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal
		2nd	3.4 Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram
		3rd	3.5 Compare between AM and FM modulation (Advantages & Disadvantages)
9	4th week 23th feb To 27th feb	1st	3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram
		2nd	3.7 Methods of FM Demodulator or detector (Forster-Seely)
		3rd	IV.AM & FM TRANSMITTER & RECEIVER 4.1 Classification of Radio Receivers
10	1st week 2nd march To 07th march	1st	4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure
		2nd	4.3 AM transmitter - working principle with Block Diagram
		3rd	4.4 Concept of Frequency conversion, RF amplifier & IF amplifier, Tuning, S/N ratio
11	2nd week 9th march To 13th march	1st	4.5 Working of super heterodyne radio receiver with Block diagram
		2nd	4.6 Working of FM Transmitter & Receiver with Block Diagram.
		3rd	V.ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM 5.1 Concept of Sampling Theorem, Nyquist rate & Aliasing
		1st	5.2 Sampling Techniques (Instantaneous, Natural, Flat Top) 5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above.

3	3rd week 16th march To 20th march	2nd	5.4 Concept of Quantization of signal & Quantization error. 5.5 Generation & Demodulation of PCM system with Block diagram & its applications.
		3rd	5.6 Companding in PCM & Vocoder 5.7 Time Division Multiplexing & explain the operation with circuit diagram.
3	4th week 23th march To 31st march	1st	5.8 Generation & demodulation of Delta modulation with Block diagram. 5.9 Generation & demodulation of DPCM with Block diagram.
		2nd	5.10 Comparison between PCM, DM, ADM & DPCM
		3rd	VI. DIGITAL MODULATION TECHNIQUES 6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept, Transmitter & Receiver) & Digital modulation formats
4	1st week 2nd april To 10th april	1st	6.2 Advantages of digital communication system over Analog system 6.3 Digital modulation techniques & types
		2nd	6.4 Generation and Detection of binary ASK, FSK, PSK,
		3rd	6.5 Concept of QPSK, QAM, MSK, GMSK
5	2nd week 13th april To 18th april	1st	6.6 Working of T1-Carrier system 6.7 Spread Spectrum & its applications
		2nd	6.8 Concept of Spread Spectrum Modulation Techniques 6.9 Define bit, Baud, symbol & channel capacity formula (Shannon Theorems)
		3rd	6.10 Types of Modem & its Application

Signature of the Teacher


22/12/2025