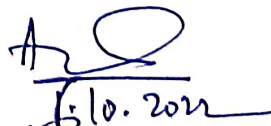


Discipline :-	Semester:-	Name of the Teaching Faculty:
ETC	5 th	SASMITA DAS
Subject:- Analog And Digital Communication (Th. 3)	No of Days/per Week Class Allotted :- 05	Semester From:- 15.09.2022 To:- 22.12.2022
Week	Class Day	Theory
1 st	1 st	Elements of Communication Systems.
	2 nd	Communication Process- Concept of Elements of Communication System & its Block diagram
	3 rd	Source of information & Communication Channels.
	4 th	Classification of Communication systems (Line & Wireless or Radio)
	5 th	Modulation Process, Need of modulation
2 nd	1 st	classify modulation process
	2 nd	Analog and Digital Signals & its conversion
	3 rd	Basic concept of Signals & Signals classification (Analog and Digital)
	4 th	
	5 th	
3 rd	1 st	Bandwidth limitation
	2 nd	Amplitude (linear) Modulation System
	3 rd	Amplitude modulation & derive the expression for amplitude modulation signal
	4 th	derive the expression for power relation in AM wave
	5 th	derive the expression for Modulation Index and simple problems
4 th	1 st	Generation of Amplitude Modulation(AM)- Linear level AM modulation only
	2 nd	Demodulation of AM waves (liner diode detector)
	3 rd	Demodulation of AM waves (square law detector & PLL)
	4 th	Explain SSB signal and DSBSC signal
	5 th	Methods of generating & detection SSB-SC signal (Indirect method only)
5 th	1 st	Methods of generation DSB-SC signal (Ring Modulator)
	2 nd	Detection of DSB-SC signal (Synchronous detection)
	3 rd	Concept of Balanced modulators
	4 th	
	5 th	
6 th	1 st	Vestigial Side Band Modulation
	2 nd	Angle Modulation Systems.
	3 rd	Concept of Angle modulation & its types (PM & FM)
	4 th	Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal.
	5 th	Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal
7 th	1 st	Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram
	2 nd	Compare between AM and FM modulation (Advantages & Disadvantages)
	3 rd	Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram
	4 th	Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principle with Block Diagram
	5 th	AM & FM TRANSMITTER & RECEIVER
8 th	1 st	
	2 nd	
	3 rd	Classification of Radio Receivers
	4 th	Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure
	5 th	AM transmitter - working principle with Block Diagram
	1 st	Concept of Frequency conversion, RF amplifier & IF amplifier ,Tuning, S/N ratio
	2 nd	Working of super heterodyne radio receiver with Block diagram

9 th	3 rd	Working of FM Transmitter & Receiver with Block Diagram.
	4 th	ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM
10 th	5 th	Concept of Sampling Theorem , Nyquist rate & Aliasing
	1 st	Sampling Techniques (Instantaneous, Natural, Flat Top)
	2 nd	Analog Pulse Modulation - Generation and detection of PAM
	3 rd	PWM & PPM system with the help of Block diagram & comparison above.
	4 th	
11 th	5 th	Concept of Quantization of signal & Quantization error.
	1 st	Generation & Demodulation of PCM system with Block diagram & applications.
	2 nd	
	3 rd	Companding in PCM & Vocoder
12 th	4 th	
	5 th	Time Division Multiplexing & explain the operation with circuit diagram
	1 st	
	2 nd	Generation & demodulation of Delta modulation with Block diagram
	3 rd	
13 th	4 th	
	5 th	Generation & demodulation of DPCM with Block diagram.
	1 st	Comparison between PCM, DM , ADM & DPCM
	2 nd	
	3 rd	DIGITAL MODULATION TECHNIQUES.
14 th	4 th	Concept of Multiplexing (FDM & TDM)- (Basic concept , Transmitter & Receiver) & Digital modulation formats
	5 th	Advantages of digital communication system over Analog system
	1 st	Digital modulation techniques & types
	2 nd	Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK & GMSK.
	3 rd	
15 th	4 th	
	5 th	Working of T1-Carrier system.
	1 st	Spread Spectrum & its applications
	2 nd	Working operation of Spread Spectrum Modulation Techniques (DS-SS & SS).
	3 rd	Define bit, Baud, symbol & channel capacity formula.(Shannon Theorem)
	4 th	Application of Different Modulation Schemes
	5 th	Types of Modem & its Application

Sasmita Das
Teaching Faculty
19/09/2022


HOD, ETC


Principal
10.10.2022

Government Polytechnic, Dhenkanal
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