Bhubanananda Orissa School of Engineering

Lesson Plan

Discipline: ETC ENGG	Semester: 5th	Name of the Teaching Faculty: PRADEEP KUMAR DHAL SAMANT, LECTURER IN ETC
Subject: Analog & Digital Communication	No of Days/ per week class allotted: 05 (Mon, Wed, Thu, Fri, Sat - 1 period each)	Semester from 01.10 2021 to 08.01.2022 No. of weeks:15
Week No.	**Class Day**	**Theory Topics**
1st	01-10-2021	**Unit 1: Elements of Communication Systems**
		1.1 Communication Process- Concept of Elements of Communication System & its Block diagram
2nd	04-10-2021	1.2 Source of information & Communication Channels
	07-10-2021	1.3 Classification of Communication systems (Line & Wireless or Radio)
	08-10-2021	1.4 Modulation Process & Need of modulation
	09-10-2021	1.4 Classify modulation process
3rd	21-10-2021	1.5 Analog and Digital Signals & its conversion.
	22-10-2021	1.6 Basic concept of Signals & Signals classification (Analog and Digital)
	23-10-2021	1.7 Bandwidth limitation
4th	25-10-2021	**Unit 2: Amplitude (Linear) Modulation System** 2.1 Amplitude modulation & derive the expression for amplitude modulation signal
	27-10-2021	2.1 Power relation in AM wave & find Modulation Index.
	28-10-2021	2.2 Generation of Amplitude Modulation (AM)- Linear level AM modulation only
	29-10-2021	
	30-10-2021	2.3 Demodulation of AM waves (Liner diode detector)
5th	01-11-2021	2.3 Demodulation of AM waves (Square law detector)
	03-11-2021	2.3 Demodulation of AM waves (PLL)
	05-11-2021	2.4 Explain SSB signal and DSBSC signal
	06-11-2021	2.5 Methods of generating & detection SSB-SC signal (Indirect method only)
6th	08-11-2021	2.6 Methods of generation DSB-SC signal (Ring Modulator)
	10-11-2021	2.6 Methods of detection of DSB-SC signal(Synchronous detection)
	11-11-2021	2.7 Concept of Balanced modulators
	12-11-2021	2.8 Vestigial Side Band Modulation
	13-11-2021	**1st Class Test**
7th	15-11-2021	**Unit 3: Angle Modulation Systems**
		3.1 Concept of Angle modulation & its types (PM & FM)
	17-11-2021	3.2 Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal.
	18-11-2021	3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal
	20-11-2021	3.4 Explain Phase modulation & difference of FM & PM

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8th	22-11-2021	3.4 Working principle of PM with Block Diagram
	24-11-2021	3.5 Compare between AM and FM modulation (Advantages & Disadvantages)
	25-11-2021	3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram
	26-11-2021	3.7 Methods of FM Demodulator or detector (Forster-Seely)- working principle with BlockDiagram
	27-11-2021	3.7 Methods of FM Demodulator or detector (Ratio detector)- working principle with BlockDiagram
9th	29-11-2021	**Unit 4: AM & FM Transmitter & Receiver**
		4.1 Classification of Radio Receivers
	01-12-2021	4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure
	02-12-2021	4.3 AM transmitter - working principle with Block Diagram
	03-12-2021	4.4 Concept of Frequency conversion, RF amplifier & IF amplifier, Tuning, S/N ratio
	04-12-2021	4.5 Working of super heterodyne radio receiver with Block diagram
10th	06-12-2021	4.6 Working of FM Transmitter & Receiver with Block Diagram
	08-12-2021	**1st Internal Exam**
	09-12-2021	**Unit 5: Analog to Digital Conversion & Pulse Modulation System**
		5.1 Concept of Sampling Theorem , Nyquist rate & Aliasing
	10-12-2021	5.2 Sampling Techniques (Instantaneous, Natural, Flat Top)
	11-12-2021	5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram
11th	13-12-2021	5.3 Comparison of PAM, PWM & PPM system
	15-12-2021	5.4 Concept of Quantization of signal & Quantization error
	16-12-2021	5.5 Generation & Demodulation of PCM system with Block diagram & its applications
	17-12-2021	5.6 Companding in PCM & Decoder
	18-12-2021	5.7 Time Division Multiplexing & explain the operation with circuit diagram
12th	20-12-2021	5.8 Generation & demodulation of Delta modulation with Block diagram
	22-12-2021	5.9 Generation & demodulation of DPCM with Block diagram
	23-12-2021	5.10 Comparison between PCM, DM , ADM & DPCM
	24-12-2021	**2nd Class Test**
13th	27-12-2021	**Unit 6: Digital Modulation Techniques**
		6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept , Transmitter & Receiver) & Digital modulationformats
	29-12-2021	6.2 Advantages of digital communication system over Analog system
		6.3 Digital modulation techniques & types
	30-12-2021	6.4 Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK
	31-12-2021	6.5 Working of T1-Carrier system
	01-01-2022	6.6 Spread Spectrum & its applications

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14th	03-01-2022	6.7 Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS)
	05-01-2022	6.8 Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems)
	06-01-2022	6.9 Application of Different Modulation Schemes
		6.10 Types of Modem & its Application
	07-01-2022	**2nd Internal Exam**
	08-01-2022	OVERALL REVISION

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01/10/21
Signature of Faculty

Head of Department

Academic Coordinator

Principal