

GANDHI SCHOOL OF ENGINEERING

BHABANDHA, BERHAMPUR

PROPOSED WORK

5th ETC SUBJECT-Th.2 - ANALOG & DIGITAL COMMUNICATION

NAME OF FACULTY- ER. DEBASHRI PATNAIK

SL NO. CHAPTER	TOPICS	NO OF PERIODS ASSIGNED BY SCTE&VT	PLANNING DATES	REMARKS
1	Elements of Communication Systems. 1.1 Communication Process- Concept of Elements of Communication System & its Block diagram 1.2 Source of information & Communication Channels. 1.3 Classification of Communication systems (Line & Wireless or Radio) 1.4 Modulation Process, Need of modulation and classify modulation process 1.5 Analog and Digital Signals & its conversion. 1.6 Basic concept of Signals & Signals classification (Analog and Digital) 1.7 Bandwidth limitation	10	15 SEPT 2022 to 23 SEPT 2022	
2	Amplitude (linear) Modulation System 2.1 Amplitude modulation & derive the expression for amplitude modulation signal, power relation in AM wave & find Modulation Index. 2.2 Generation of Amplitude Modulation(AM)-	15	26 SEPT 2022 To 17 OCT 2022	

	Linear level AM modulation only 2.3 Demodulation of AM waves (liner diode detector, square law detector & PLL) 2.4 Explain SSB signal and DSBSC signal 2.5 Methods of generating & detection SSB-SC signal (Indirect method only) 2.6 Methods of generation DSB-SC signal (Ring Modulator) and detection of DSB-SC signal (Synchronous detection) 2.7 Concept of Balanced modulators 2.8 Vestigial Side Band Modulation			
3	Angle Modulation Systems. 3.1 Concept of Angle modulation & its types (PM & FM) 3.2 Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal. 3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal 3.4 Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram 3.5 Compare between AM and FM modulation (Advantages & Disadvantages) 3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram 3.7 Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principle with Block Diagram	10	18 OCT 2022 to 28 OCT 2022	
4	AM & FM TRANSMITTER & RECEIVER 4.1 Classification of Radio Receivers 4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure 4.3 AM transmitter - working principle with Block Diagram	08	31 OCT 2022 to 07 NOV 2022	

	<p>4.4 Concept of Frequency conversion, RF amplifier & IF amplifier ,Tuning, S/N ratio</p> <p>4.5 Working of super heterodyne radio receiver with Block diagram</p> <p>4.6 Working of FM Transmitter & Receiver with Block Diagram.</p>			
5	<p>ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM.</p> <p>5.1 Concept of Sampling Theorem , Nyquist rate & Aliasing</p> <p>5.2 Sampling Techniques (Instantaneous, Natural, Flat Top)</p> <p>5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above.</p> <p>5.4 Concept of Quantization of signal & Quantization error. 5.5 Generation & Demodulation of PCM system with Block diagram & its applications.</p> <p>5.6 Companding in PCM & Vocoder</p> <p>5.7 Time Division Multiplexing & explain the operation with circuit diagram.</p> <p>5.8 Generation & demodulation of Delta modulation with Block diagram.</p> <p>5.9 Generation & demodulation of DPCM with Block diagram.</p> <p>5.10 Comparison between PCM, DM , ADM & DPCM</p>	17	<p>09 NOV 2022 to 01 DEC 2022</p>	
6	<p>DIGITALMODULATION TECHNIQUES.</p> <p>6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept , Transmitter & Receiver) & Digital modulation formats.</p> <p>6.2 Advantages of digital communication</p>	15	<p>02 DEC 2022 to 22 DEC 2022</p>	

	<p>system over Analog system</p> <p>6.3 Digital modulation techniques & types.</p> <p>6.4 Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK.</p> <p>6.5 Working of T1-Carrier system. 6.6 Spread Spectrum & its applications</p> <p>6.7 Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS).</p> <p>6.8 Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems)</p> <p>6.9 Application of Different Modulation Schemes.</p> <p>6.10 Types of Modem & its Application</p>			
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