BALASORE SCHOOL OF ENGINEERING, BALASORE

Department of Electronics & Telecommunication Engineering

LESSON PLAN FOR 5TH SEMESTER, ETC

SUBJECT- ANALOG AND DIGITAL COMMUNICATION (TH-3)

NAME OF THE FACULTY- HARISH CHANDRA SAHU

SL NO	MONTH	DATE	CH. NO	TOPICS TO BE COVERED	NO. OF PERIODS REQUIRED AS PER SYLLABUS	NO OF PERIODS AVAILABLE AS PER PLAN
1	SEP		1	Unit-1: Elements of Communication Systems.	10	10
2		15/09/22 16/09/22		1.1 Communication Process- Concept of Elements of Communication System & its Block diagram		
3		20/09/22		1.2 Source of information & Communication Channels.		
4		21/09/22		1.3 Classification of Communication systems (Line & Wireless or Radio)		
5		22/09/22 23/09/22 24/09/22		1.4 Modulation Process, Need of modulation and classify modulation process		
6		27/09/22 28/09/22		1.5 Analog and Digital Signals & its conversion		
7		29/09/22		1.6 Basic concept of Signals & Signals classification (Analog and Digital)		
8		30/09/22		1.7 Bandwidth limitation		
9	OCT		2	Unit-2: Amplitude (linear) Modulation System	15	13
10		1/10/22 11/10/22 12/10/22		2.1 Amplitude modulation & derive the expression for amplitude modulation signal, power relation in AM wave & find Modulation Index		
11		13/10/22		2.2 Generation of Amplitude Modulation(AM)- Linear level AM modulation only		
12		14/10/22 15/10/22 18/10/22		2.3 Demodulation of AM waves (liner diode detector, square law detector & PLL)		
13		19/10/22		2.4 Explain SSB signal and DSBSC signal		

14		20/10/22 21/10/22		2.5 Methods of generating & detection SSB-SC signal (Indirect method only)		
15		22/10/22 25/10/22 26/10/22		2.6 Methods of generation DSB-SC signal (Ring Modulator) and detection of DSB-SC signal (Synchronous detection)		
16		27/10/22		2.7 Concept of Balanced modulators		
17		28/10/22 29/10/22		2.8 Vestigial Side Band Modulation		
18				Unit-3: Angle Modulation Systems.		
19		1/11/2022		3.1 Concept of Angle modulation & its types (PM & FM)		
20		2/11/2022		3.2 Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal		
21		3/11/2022		3.3 Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal		
22		4/11/22 5/11/22	3	3.4 Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram	10	7
23		9/11/2022		3.5 Compare between AM and FM modulation (Advantages & Disadvantages)		
24		10/11/2022		3.6 Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram		
25	NOV	11/11/22 12/11/22		3.7 Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principle with Block Diagram		
26				Unit-4: AM & FM TRANSMITTER & RECEIVER		
27		15/11/22		4.1 Classification of Radio Receivers		
28		17/11/22		4.2 Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure		
29		18/11/22	4	4.3 AM transmitter - working principle with Block Diagram	8	6
30		19/11/22 22/11/22		4.4 Concept of Frequency conversion, RF amplifier & IF amplifier ,Tuning, S/N ratio		

31		23/11/22		4.5 Working of super heterodyne radio receiver with Block diagram		
32		25/11/22 26/11/22		4.6 Working of FM Transmitter & Receiver with Block Diagram.		
33				Unit-5: ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM.		
34		29/11/22 30/11/22		5.1 Concept of Sampling Theorem , Nyquist rate & Aliasing		
35		1/12/2022		5.2 Sampling Techniques (Instantaneous, Natural, Flat Top)		
36		2/12/22 3/12/22		5.3 Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above.		
37		6/12/2022		5.4 Concept of Quantization of signal & Quantization error		
38		7/12/2022	5	5.5 Generation & Demodulation of PCM system with Block diagram & its applications.	17	12
39		8/12/2022		5.6 Companding in PCM & Vocoder		
40		9/12/2022		5.7 Time Division Multiplexing & explain the operation with circuit diagram.		
41		10/12/22 13/12/22		5.8 Generation & demodulation of Delta modulation with Block diagram.		
42		14/12/22		5.9 Generation & demodulation of DPCM with Block diagram.		
43		15/12/22		5.10 Comparison between PCM, DM , ADM & DPCM		
44	DEC			Unit-6: DIGITALMODULATION TECHNIQUES.		
45		16/12/22		6.1 Concept of Multiplexing (FDM & TDM)- (Basic concept , Transmitter & Receiver) & Digital modulation formats.		
46		17/12/22		6.2 Advantages of digital communication system over Analog system		
47		17/12/22		6.3 Digital modulation techniques & types.		
48		20/12/22	6	6.4 Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK.	15	10

49		21/12/22		6.5 Working of T1-Carrier system.		
50		21/12/22		6.6 Spread Spectrum & its applications		
51		21/12/22		6.7 Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS).		
52		22/12/22		6.8 Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems)		
53		22/12/22		6.9 Application of Different Modulation Schemes		
54		22/12/22		6.10 Types of Modem & its Application		

SL NO	MONTH	CHAPTERS TO BE COMPLETED	% COMPLETED
1	SEP	CH 1	20
2	OCT	CH 2	25
3	NOV	CH 3 CH 4 CH 5.1	35
4	DEC	CH 5 CH 6	20

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