

**GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING, BERHAMPUR**  
**ELECTRONICS AND TELECOMMUNICATION PROGRAMME**

**LESSON PLAN FOR THE SESSION 2024-25**

**SUBJECT- ANALOG AND DIGITAL COMMUNICATION**

**BRANCH-E&TC ENGG.**

**NAME OF THE FACULTY- MISS. JASMITA SAHU**

**SEMESTER-5TH**

<b>UNIT</b>	<b>DATE</b>	<b>LECTURE NO.</b>	<b>TOPIC TO BE COVERED</b>
1	01/07/2024	1	Communication process- elements of communication system & its block diagram
	02/07/2024	2	Source of information & Communication channels
	03/07/2024	3	Classification of communication systems(line &wireless or radio)
	04/07/2024	4	Modulation, need of modulation and classify modulation process
	05/07/2024	5	Analog and digital signals & its conversion
	08/07/2024	6	Basic concept of signals & signals classification (analog and digital)
	09/07/2024	7	limitation of communication system (bandwidth limitation)
2	10/07/2024	8	Amplitude modulation & derive the expression for amplitude modulation signal
	11/07/2024	9	Modulation index
	12/07/2024	10	Power relation in AM wave
	15/07/2024	11	Discussion of Unit-1
	16/07/2024	12	Generation of amplitude modulation(AM)
	18/07/2024	13	Collector modulation method
	19/07/2024	14	Demodulation of AM waves(square law detector)
	22/07/2024	15	Linear diode detector
	23/07/2024	16	PLL demodulator
	24/07/2024	17	DSB-SC signal, SSB signal
	25/07/2024	18	Methods of generating SSB-SC signal
	26/07/2024	19	Method of detection of SSB-SC signal
	29/07/2024	20	Generation of DSB-SC signal (balanced modulator)
	30/07/2024	21	Ring modulator
	31/07/2024	22	Synchronous detection of DSB-SC
	01/08/2024	23	Difference between DSB-SC and SSB-SC
	02/08/2024	24	Vestigial Side Band modulation
05/08/2024	25	Discussion of Unit-2	
3	06/08/2024	26	Concept of angle modulation & its types (PM & FM), expression for frequency modulated signal

	07/08/2024	27	Modulation index and side band of FM signal, frequency spectrum of FM signal
	08/08/2024	28	Phase Modulation & difference of FM & PM
	09/08/2024	29	Compare between AM and FM modulation (advantages & disadvantages)
	12/08/2024	30	Methods of FM generation(indirect(Armstrong)method only)
	13/08/2024	31	Methods of FM demodulator or detector (Forster-Seely detector)
	14/08/2024	32	Ratio detector
	16/08/2024	33	Discussion of Unit-3
4	20/08/2024	34	Classification of radio receivers, define the terms selectivity, sensitivity, fidelity and noise figure
	21/08/2024	35	AM transmitter-working principle with block diagram
	22/08/2024	36	Concept of frequency conversion, RF amplifier & IF amplifier, tuning, S/N ratio
	23/08/2024	37	Working of super-heterodyne radio receiver with block diagram
	27/08/2024	38	Working of FM transmitter
	28/08/2024	39	Working of FM receiver
	29/08/2024	40	Discussion of Unit-4
5	30/08/2024	41	Concept of sampling theorem, nyquist rate & aliasing
	02/09/2024	42	Sampling techniques (instantaneous, natural, flat top)
	03/09/2024	43	Analog pulse modulation – generation and detection of PAM signal
	04/09/2024	44	Generation and detection of PWM signal
	05/09/2024	45	Generation and detection of PPM signal
	06/09/2024	46	Comparison of PAM, PWM and PPM
	09/09/2024	47	Concept of quantization of signal & quantization error
	10/09/2024	48	Generation, transmission path of PCM system with block diagram
	11/09/2024	49	Demodulation of PCM system with block diagram & its application
	12/09/2024	50	Companding in PCM
	13/09/2024	51	Vocoder
	17/09/2024	52	Time Division Multiplexing & explain the operation with circuit diagram
	18/09/2024	53	Discussion on doubts of students
	19/09/2024	54	Generation & demodulation of DPCM with block diagram
	20/09/2024	55	Generation & demodulation of Delta modulation with block diagram
	23/09/2024	56	Advantages and disadvantages of delta modulation,
	24/09/2024	57	Comparison between PCM, DM, ADM & DPCM
	25/09/2024	58	Discussion of Unit-5
6	26/09/2024	59	Concept of multiplexing, FDM transmitter and receiver
	27/09/2024	60	Digital modulation formats, advantages of digital communication system over analog system
	30/09/2024	61	Digital modulation techniques & types, generation of ASK
	01/10/2024	62	Detection of binary ASK and generation of BPSK
	03/10/2024	63	Detection of binary PSK
	04/10/2024	64	Generation and detection of binary FSK
	14/10/2024	65	QPSK and its generation

15/10/2024	66	<b>Class test question discussion &amp; distribution of evaluated answer sheet to the student for their references</b>
17/10/2024	67	Detection of QPSK
18/10/2024	68	Generation and detection of QAM
21/10/2024	69	Generation and detection of MSK
22/10/2024	70	Generation and detection of GMSK
23/10/2024		Working of T1-carrier system
	71	Spread spectrum & its applications
24/10/2024	72	Working of spread spectrum modulation techniques (DS-SS)
25/10/2024	73	Working of spread spectrum modulation techniques (FH-SS)
28/10/2024	74	Define bit, baud, symbol & channel capacity formula.(Shannon theorems), application of different modulation schemes
29/10/2024	75	Types of modem & its application
30/10/2024	76	Discussion of Unit-6
01/11/2024	77	
04/11/2024	78	<b>Previous semester question discussion</b>
05/11/2024	79	<b>Previous semester question discussion</b>
06/11/2024	80	<b>OMR test</b>
07/11/2024	81	Class test question discussion & distribution of evaluated answer sheet to the student for their references
08/11/2024	82	Numerical Solving

*Darmita Sahu.*

**SIGNATURE OF FACULTY MEMBER**

**DATE 01/07/2024**

**COUNTER SIGNATURE OF H.O.D.**