



LESSON PLAN

Discipline: ETC	Semester: 5 <sup>th</sup>	Name Of The Teaching Faculty ARUN PRASAD PANDA
Subject: <b>ANALOG AND DIGITAL COMM.( TH3)</b>	No. Of Days Per Week Class Allotted: 05 P	Semester From Date: 15-09-2022 To Date: 22-12-2022
		No. of weeks: 15
Week	Class Day	Theory Topic
1 <sup>st</sup> week	1 <sup>st</sup>	➤ <b>UNIT-1: 1.1-&gt;Communication process-concept of element of communication system and its block diagram</b>
	2 <sup>nd</sup>	➤ <b>1.2: Source of information and communication channels</b>
	3 <sup>rd</sup>	➤ <b>1.3: Classification of communication system(line and wireless or radio)</b>
	4 <sup>th</sup>	➤ <b>1.4: Modulation process, need of modulation and classify modulation process</b>
	5 <sup>th</sup>	➤ <b>1.5: Analog and digital signal and its classification</b>
2 <sup>nd</sup> week	1 <sup>st</sup>	➤ <b>1.6: Basic concept of signals signals classification</b>
	2 <sup>nd</sup>	➤ <b>1.7:Bandwidth limitation</b>
	3 <sup>rd</sup>	➤ <b>Unit-2: 2.1-&gt;Amplitude modulation and derive the expression for amplitude modulated signal</b>
	4 <sup>th</sup>	➤ <b>2.1: Power relation in a.m wave and find modulation index</b>
	5 <sup>th</sup>	➤ <b>2.2: Generation of amplitude modulation-linear level am modulation only</b>
3 <sup>rd</sup> week	1 <sup>st</sup>	➤ <b>2.3: Demodulation of am wave(linear diode detector)</b>
	2 <sup>nd</sup>	➤ <b>2.3: Square law detector and p.l.l</b>
	3 <sup>rd</sup>	➤ <b>2.4: Explain ssb signal and dsb-sc signal</b>
	4 <sup>th</sup>	➤ <b>2.5:Method of generating and detecting ssb-sc signal(indirect method )</b>
	5 <sup>th</sup>	➤ <b>2.6: Method of generating dsb-sc signal(ring modulator)</b>
4 <sup>th</sup> week	1 <sup>st</sup>	➤ <b>2.6: Detection of dsb-sc signal(synchronous detection)</b>
	2 <sup>nd</sup>	➤ <b>2.7: Concept of balanced modulator</b>
	3 <sup>rd</sup>	➤ <b>2.8: Vestigial side band modulation</b>
	4 <sup>th</sup>	➤ <b>UNIT-3: 3.1: Concept of angle modulation and its types (p.m. and f.m)</b>
	5 <sup>th</sup>	➤ <b>3.2: Basic principle of freq. modulation and freq. spectrum of f.m signal</b>
5 <sup>th</sup> week	1 <sup>st</sup>	➤ <b>3.3: Expression for freq. modulated signal and modulation index and side band f.m signal</b>
	2 <sup>nd</sup>	➤ <b>3.4: Explain phase modulation and difference f.m and p.m</b>
	3 <sup>rd</sup>	➤ <b>3.5: Compare between am &amp; fm modulation</b>
	4 <sup>th</sup>	➤ <b>3.6: Methods of fm generation (armstrong) working principle with block diagram</b>
	5 <sup>th</sup>	➤ <b>3.7: Methods of fm demodulator ( foster seely) working principle with block diagram</b>
6 <sup>th</sup> week	1 <sup>st</sup>	➤ <b>3.7: Ratio detector method</b>
	2 <sup>nd</sup>	➤ <b>UNIT 4: 4.1: Classification of radio receiver</b>
	3 <sup>rd</sup>	➤ <b>4.2: Define term selectivity , sensitivity , fidelity &amp; N.F.</b>
	4 <sup>th</sup>	➤ <b>4.3: AM transmitter- working principle with block diagram</b>
	5 <sup>th</sup>	➤ <b>4.4: Concept of frequency conversion , RF &amp; IF amplifier , tuning &amp; S/N ratio</b>
7 <sup>th</sup> week	1 <sup>st</sup>	➤ <b>4.5: Working of super heterodyne radio receiver with block diagram</b>
	2 <sup>nd</sup>	➤ <b>4.6: Working of FM transmitter &amp; receiver with block diagram</b>
	3 <sup>rd</sup>	➤ <b>UNIT-5:5.1-&gt;Concept of sampling theorem, nyquist rate and aliasing</b>

	4 <sup>th</sup>	➤ 5.2: Sampling techniques (instantaneous ,natural, flat top)
	5 <sup>th</sup>	➤ 5.3:Analog pulse modulation-generation and detection of PAM
8 <sup>th</sup> week	1 <sup>st</sup>	➤ 5.3:PWM and PPM system with the help of block diagram and comparison of all above
	2 <sup>nd</sup>	➤ 5.4:Concept of quantization of signal and quantization error
	3 <sup>rd</sup>	➤ 5.5:Generation and detection of PCM system with block diagram and its application
	4 <sup>th</sup>	➤ 5.6: Companding in PCM and VCODER
	5 <sup>th</sup>	➤ 5.7: Time division multiplexing and explain operation with ckt.diagram
9 <sup>th</sup> week	1 <sup>st</sup>	➤ Assignment-1,2
	2 <sup>nd</sup>	➤ 5.8:Generation of delta modulation
	3 <sup>rd</sup>	➤ 5.8:Demodulation of delta modulation
	4 <sup>th</sup>	➤ 5.9:Generation and demodulation of DPCM with block diagram
	5 <sup>th</sup>	➤ 5.10:Comparision b/w PCM,DM,ADM and DPCM
10 <sup>th</sup> week	1 <sup>st</sup>	➤ ASSIGNMENT -3
	2 <sup>nd</sup>	➤ <u>UNIT:6</u> :6.1: Concept of multiplexing ,transmitter and receiver
	3 <sup>rd</sup>	➤ 6.2: Advantage of digital over analog system
	4 <sup>th</sup>	➤ 6.3: Digital modulation techniques and types
	5 <sup>th</sup>	➤ 6.4: Generation and detection of A.S.K
11 <sup>th</sup> week	1 <sup>st</sup>	➤ 6.4: Generation and detection of F.S.K
	2 <sup>nd</sup>	➤ 6.4: Generation and detection of P.S.K
	3 <sup>rd</sup>	➤ 6.4: Generation and detection of QPSK
	4 <sup>th</sup>	➤ 6.4: Generation and detection of QAM
	5 <sup>th</sup>	➤ 6.4: Generation and detection of MSK
12 <sup>th</sup> week	1 <sup>st</sup>	➤ 6.4: Generation and detection of GMSK
	2 <sup>nd</sup>	➤ 6.5: Working of T1-carrier system
	3 <sup>rd</sup>	➤ 6.6: Spread spectrum and its application
	4 <sup>th</sup>	➤ ASSIGNMENT-4
	5 <sup>th</sup>	➤ 6.7: Working operation of spread spectrum modulation techniques
13 <sup>th</sup> week	1 <sup>st</sup>	➤ Previous year question and answer discussion
	2 <sup>nd</sup>	➤ 6.7: Working operation of FS-SS techniques
	3 <sup>rd</sup>	➤ REPEAT OF 6.7
	4 <sup>th</sup>	➤ 6.8: Define bit, baud
	5 <sup>th</sup>	➤ 6.8: Define symbol and channel capacity
14 <sup>th</sup> week	1 <sup>st</sup>	➤ 6.9: Application of different modulation schemes
	2 <sup>nd</sup>	➤ 6.10:Types of MODEMS and its application
	3 <sup>rd</sup>	➤ REPEAT OF 6.10
	4 <sup>th</sup>	➤ Discussion of last five previous years questions
	5 <sup>th</sup>	➤ Discussion of last five previous years questions
15 <sup>th</sup> week	1 <sup>st</sup>	➤ Discussion of last five previous years questions
	2 <sup>nd</sup>	➤ Discussion of last five previous years questions
	3 <sup>rd</sup>	➤ Discussion of last five previous years questions
	4 <sup>th</sup>	➤ Discussion of last five previous years questions
	5 <sup>th</sup>	➤ Discussion of last five previous years questions