GIET POLYTECHNIC, JAGATPUR, CUTTACK

LESSON PLAN

Discipline: ETC	Semester: 5th	Name Of The Teaching Faculty: Jyotirmaya Samal
Subject: ANALOG ETC AND DIGITAL ETC	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
1st week	1st	➢ UNIT-1: 1.1->Communication process-concept of element of communication system and its block diagram
	2nd	➢ 1.2: Source of information and communication channels
	3rd	➢ 1.3: Classification of communication system(line and wireless or radio)
	4th	➢ 1.4: Modulation process, need of modulation and classify modulation process
	5th	➢ 1.5: Analog and digital signal and its classification
2nd week	1st	➢ 1.6: Basic concept of signals signals classification
	2nd	➢ 1.7:Bandwidh limitation
	3rd	➢ Unit-2: 2.1->Amplitude modulation and derive the expression for amplitude modulated signal
	4th	➢ 2.1: Power relation in a.m wave and find modulation index
	5th	➢ 2.2: Generation of amlitude modulation-linear level am modulation only
3rd week	1st	➢ 2.3: Demodulation of am wave(linear diode detector)
	2nd	➢ 2.3: Square law detector and p.l.l
	3rd	➢ 2.4: Explain ssb signal and dsbsc signal
	4th	➢ 2.5:Method of generating and detecting ssb-sc signal(indirect method)
	5th	➢ 2.6: Method of generating dsb-scsignal(ring modulator)
4th week	1st	➢ 2.6: Detection of dsb-sc signal(synchronous detection)
	2nd	➢ 2.7: Concept of balanced modulator
	3rd	➢ 2.8: Vestigial side band modulation
	4th	➢ UNIT-3: 3.1: Concept of angle modulation and its types (p.m. and f.m)
	5th	➢ 3.2: Basic principle of freq. modulation and freq. spectrum of f.m signal
5th week	1st	➢ 3.3: Expression for freq. modulated signal and modulation index and side band f.m signal
	2nd	➢ 3.4: Explain phase modulation and difference f.m and p.m
	3rd	➢ 3.5: Compare between am & fm modulation
	4th	➢ 3.6: Methods of fm generation (armstrong) working principle with block diagram
	5th	➢ 3.7: Methods of fm demodulator (foster seely) working principle with block diagram
6th week	1st	➢ 3.7: Ratio detector method
	2nd	➢ UNIT 4: 4.1: Classification of radio receiver
	3rd	➢ 4.2: Define term selectivity , sensitivity , fidelity & N.F.
	4th	➢ 4.3: AM transmitter- working principle with block diagram
	5th	➢ 4.4: Concept of frequency conversion , RF & IF amplifier , tuning & S/N ratio
7th week	1st	➢ 4.5: Working of super heterodyne radio receiver with block diagram
	2nd	➢ 4.6: Working of FM transmitter & receiver with block diagram
	3rd	➢ UNIT-5:5.1->Concept of sampling theorem, nyquist rate and aliasing

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

Signature of principal Signature of faculty Signature of sr. lecture