LESSON PLAN

SUB-ANLOG ELECTRONICS AND LINIER IC

BRANCH-ETC

SEM -4TH

Week	Lecture	Topic to be covered
1st week	1st	UNIT-1: DIODE,TRANSISTOR AND CIRCUIT Working Principle of diode and current Equation, Specifications and use of PN junction diode, Construction of diode
	2nd	Breakdown of diode, , Working of diode, Characteristic of diode
	3rd	Classification of rectifier, Half wave rectifier
	4th	Full wave rectifier
2nd week	1st	Working principle of p-n-p and n-p-n transistor,
	2nd	Different types of transistor connection (CB, CE and CC)& input and output characteristics of transistor in different connections.
	3rd	Define ALPHA, BETA and GAMMA of transistors in various modes. Establish the Mathematical relationship between them.
	4th	Load line (AC &DC) and determine the Q-point.
	5th	Basic concept of Biasing, Types of Biasing,
3rd week	1st	h-parameter model of BJT,
	2nd	Types of Coupling, working principle and use of R-C Coupled Amplifier & Frequency Responses
	3rd	**Unit-2: AUDIO POWER AMPLIFIERS.** Classify Power Amplifier &Differentiate between Voltage and Power Amplifier.
	4th	Working principle of Class A Power Amplifier
	5th	Working principle of Class B Power Amplifier
4th week	1st	Working principle of Class C Power Amplifier
	2nd	Working principle of Class D Power Amplifier
	3rd	Working principle of Class AB Power Amplifier

Week	Lecture	Topic to be covered
5th week	1st	Working of Class B push pull amplifier
	2nd	**Unit-3: FIELD EFFECT TRANSISTOR (FET).** FET & its classifications &Differentiate between JFET & BJT.
	3rd	Construction, working principle of N channel JFET and P channel JFET
	4th	characteristics of JEFT
	5th	Explain JEFT as an amplifier,
6th week	1st	Parameters of JFET & Establish relation among JFET parameters
	2nd	Construction & its classification MOSFET
	3rd	Working principle of MOSFET
	4th	Characteristics (Drain & Transfer) of MOSFET
	5th	Explain the operation of CMOS,
7th week	1st	Explain the operation of VMOS,
	2nd	Explain the operation of LD MOS,
	3rd	**Unit-4: FEED BACK AMPLIFIER & OSCILLATOR** Define & classify Feedback Amplifier, Types of feedback – negative &positive feedback.
	4th	Types of negative feedback – voltage shunt, voltage series,
8th week	1st	Types of negative feedback – current shunt, current series.
	2nd	Characteristics voltage gain, bandwidth , input Impedance output impedance, stability, noise , distortion in amplifiers.

	3rd	Oscillator -block diagram of sine wave oscillator
	4th	Types Requirement of oscillation- Barkhausen criterion

13th week	1st	Define the following electrical characteristics input offset voltage, input offset current, CMMR, Large signal voltage gain, Slew rate
	2nd	Explain the Open Loop configuration of non-inverting Amplifier
	3rd	Explain the Open Loop configuration of inverting Amplifier
	4th	Voltage series feedback amplifier and derive the close loop Voltage gain
	5th	Gain of series feedback circuits input resistance, and output resistance, bandwidth and total output offset voltage with feedback
14th week	1st	Voltage shunt feedback amplifier and derive the close loop, Voltage gain,
	2nd	Gain of shunt feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
	3rd	**Unit-7. APPLICATION OF OPERATIONAL AMPLIFIER, TIMER CIRCUITS& IC voltage regulator** summing scaling and averaging of inverting and non-inverting amplifiers
	4th	DC & AC Amplifies using OP-AMP. Integrator and differentiator using op-amp.
15th Week	1st	Active filter and describe the filter design of fast order low Pass Butterworth, Concept of Zero-Crossing Detector using Op-Amp
	2nd	Block diagram and operation of IC 555 timer &IC 565 PLL& its applications.
	3rd	Working of Current to voltage and Voltage to Frequency and Frequency to Voltage Convertor using Operational Amplifier
	4th	Operation of power supply using 78XX and 79XX,LM 317 Series with their PIN configuration , Functional block diagram & Working of IC regulator LM 723 & LM 317
	5th	Functional block diagram & Working of IC regulator LM 723 & LM 317