LESSON PLAN

DEPARTMENT OF ELECTRICAL ENGINEERING, ITT, CHOUDWAR

SUBJECT: AE & OP-AMP **Periods:** 4 per week **SEMESTER:** 4TH

NAME OF FACULTY: Mr.T R Sahoo **No. of weeks:** 15

Week	Period	Theory Topics
1st	1st	Introduction to semiconductor and its Application
	2nd	P-N Junction Diode and its working
	3rd	V-I characteristic of PN junction Diode.
	4th	DC load line
2nd	1st	Important terms such as Ideal Diode, Knee voltage
	2nd	Junctions break down(Zener breakdown and Avalanche breakdown)
	3rd	P-N Diode clipping and Diode clamping Circuit.
	4th	SPECIAL SEMICONDUCTOR DEVICES: Thermistors , Sensors & barretters
3rd	1st	Zener Diode and Tunnel Diode
	2nd	PIN Diode
	3rd	OPERATIONAL AMPLIFIERS: General circuit simple of OP-AMP and IC – CA – 741 OP-AMP
	4th	Operational amplifier stages
4th	1st	Equivalent circuit of operational amplifier
	2nd	Open loop OP-AMP configuration and OPAMP with feed back
	3rd	Inverting OP-AMP and Non inverting OP-AMP
	4th	Voltage follower & buffer
5th	1st	Differential amplifier
	2nd	Adder or summing amplifier
	3rd	Sub tractor , integrator , differentiator and comparator
	4th	FIELD EFFECT TRANSISTOR Classification of FET Advantages of FET over BJT and Principle of operation of BJT
6th	1st	FET parameters
	2nd	DC drain resistance, AC drain resistance, Trans-conductance
	3rd	Biasing of FET
	4th	RECTIFIER CIRCUITS & FILTERS: Classification of rectifiers
7th	1st	Analysis of half wave, full wave ,centre tapped
	2nd	Bridge rectifiers and calculate
	3rd	DC output current and voltage
	4th	RMS output current and voltage
8th	1st	Rectifier efficiency and Ripple factor
	2nd	Regulation
	3rd	Transformer utilization factor
	4th	Peak inverse voltage
9th	1st	Filters
	2nd	Shunt capacitor filter
	3rd	Choke input filter
	4th	π filter

10th	1st	**TRANSISTORS:** Principle of Bipolar junction transistor
	2nd	Different modes of operation of transistor
	3rd	Current components in a transistor
	4th	Transistor as an amplifier
11th	1st	Transistor circuit configuration & its characteristics
	2nd	CB CE CC Configuration
	3rd	TRANSISTOR CIRCUITS : Transistor biasing
	4th	Stabilization and Stability factor, Different method of Transistors Biasing
12th	1st	Base resistor method, Collector to base bias, Self bias or voltage divider method
	2nd	TRANSISTOR AMPLIFIERS & OSCILLATORS Practical circuit of transistor amplifier, DC load line and DC equivalent circuit
	3rd	AC load line and AC equivalent circuit, Calculation of gain, Phase reversal
	4th	H-parameters of transistors, Simplified H-parameters of transistors
13th	1st	Generalised approximate model, Analysis of CB,CE,CC amplifier using generalised approximate model, Multi stage transistor amplifier
	2nd	R.C. coupled amplifier and Transformer coupled amplifier
	3rd	Feed back in amplifier, General theory of feed back
	4th	Negative feedback circuit, Advantage of negative feed back
14th	1st	Power amplifier and its classification, Difference between voltage amplifier and power amplifier, Transformer coupled class A power amplifier
	2nd	Class A push – pull amplifier, Class B push – pull amplifier
	3rd	Positive Feedback, Tank Circuit
	4th	Types of oscillators and Essentials of transistor oscillator
15th	1st	Principle of operation of tuned collector, Hartley Oscillator
	2nd	Principle of operation of colpitt, phase shift Oscillator
	3rd	Principle of operation of wein-bridge oscillator
	4th	Previous Years Semester Question Answer Discussion

Teaching Faculty