Lesson Plan

	Discipline:Electrical Engineering	Semester-4th SUMMER 2024	Name of the Teachng Faculty: Sri Soumya Prakash Sutar
Sl. No.	Subject-Analog Electronics and OP-AMP	No. Of Days/Week class alloted:04	Semester From date: 16.01.2024 To date: 26.04.2024. No of weeks: 15
	Weeks/Months	Class Day	Topic
1	1st Week	1st	1 . 1 P-N Junction Diode 1 . 2 Working of Diode
		2nd	1 . 3 V-I characteristic of PN junction Diode.
		3rd	1 . 4 DC load line 1 . 5 Important terms such as Ideal Diode, Knee voltage
		4th	1 . 6 Junctions break down. 1.6.1 Zener breakdown
2	2nd Week	1st	1.6.2 Avalanche breakdown
		2nd	1 . 7 P-N Diode clipping Circuit.
		3rd	1 . 8 P-N Diode clamping Circuit
		4th	2 . 1 Thermistors, Sensors & barretters
3	3rd Week	1st	2 . 2 Zener Diode
		2nd	2 . 3 Tunnel Diode
		3rd	2 . 4 PIN Diode
		4th	3.1 Classification of rectifiers 3.2 Analysis of half wave rectifiers
4	4th Week	1st	3.2.Analysis of full wave centre tapped and Bridge rectifiers and calculate:
		2nd	3.2.1 DC output current and voltage
		3rd	3.2.2 RMS output current and voltage
		4th	3.2.3 Rectifier efficiency
5	5th Week	1st	3.2.4 Ripple factor,3.2.5 Regulation
		2nd	3.2.6 Transformer utilization factor 3.2.7 Peak inverse voltage
		3rd	3.3 Filters,3.3.1 Shunt capacitor filter
		4th	3.3.2 Choke input filter,3.3.3 π filter
6	6th Week	1st	4.1 Principle of Bipolar junction transistor
		2nd	4.2 Different modes of operation of transistor
		3rd	4.3 Current components in a transistor
		4th	4.4 Transistor as an amplifier
	7th Week	1st	4.5 Transistor circuit configuration & its characteristics
		2nd	4.5.1 CB Configuration
		3rd	4.5.2 CE Configuration
		4th	4.5.3 CC Configuration

7	8th Week	1st	5.1 Transistor biasing 5.2 Stabilization
		2nd	5.3 Stability factor 5.4 Different method of Transistors Biasing
		3rd	5.4.1 Base resistor method
		4th	5.4.2 Collector to base bias
8	9th Week	1st	5.4.3 Self bias or voltage divider method
		2nd	6.1 Practical circuit of transistor amplifier 6.2 DC load line and DC equivalent circuit
		3rd	6.3 AC load line and AC equivalent circuit 6.4 Calculation of gain
		4th	6.5 Phase reversal 6.6 H-parameters of transistors
9	10th Week	1st	6.7 Simplified H-parameters of transistors
		2nd	6.8 Generalised approximate model 6.9 Analysis of CB, CE, CC amplifier using generalised approximate model
		3rd	6.9 Analysis of CB, CE, CC amplifier using generalised approximate model
		4th	6.10 Multi stage transistor amplifier 6.10.1 R.C. coupled amplifier
10	11th Week	1st	6.10.2 Transformer coupled amplifier 6.11 Feed back in amplifier
		2nd	6.11.1 General theory of feed back 6.11.2 Negative feedback circuit 6.11.3 Advantage of negative feed back
		3rd	6.12 Power amplifier and its classification 6.12.1 Difference between voltage amplifier and power amplifier
		4th	6.12.2 Transformer coupled class A power amplifier 6.12.3 Class A push – pull amplifier 6.12.4 Class B push – pull amplifier
11	12th Week	1st	6.13 Oscillators 6.13.1 Types of oscillators 6.13.2 Essentials of transistor oscillator
		2nd	6.13.3 Principle of operation of tuned collector, Hartley, colpitt, phase shift, wein-bridge oscillator (no mathematical derivations)
		3rd	7.1 Classification of FET 7.2 Advantages of FET over BJT
		4th	7.3 Principle of operation of FET 7.4 FET parameters (no mathematical derivation)
12	13th Week	1st	7.4.1 DC drain resistance 7.4.2 AC drain resistance
		2nd	7.4.3 Trans-conductance,Amplification factor

		3rd	7.5 Biasing of FET
		4th	7.5 Biasing of FET
13	14th Week	1st	8.1 General circuit simple of OP-AMP and IC – CA – 741 OP AMP 8.2 Operational amplifier stages
		2nd	8.3 Equivalent circuit of operational amplifier,8.4 Open loop OP-AMP configuration
		3rd	8.5 OPAMP with fed back 8.6 Inverting OP-AMP
		4th	8.7 Non inverting OP-AMP 8.8 Voltage follower & buffer
13	15th Week	1st	8.9 Differential amplifier 8.9.1 Adder or summing amplifier
		2nd	8.9.2 Sub tractor 8.9.3 Integrator
		3rd	8.9.4 Differentiator 8.9.5 Comparator
		4th	Previous Semester Question Discussion

16/1/24

Signature of Sr.Lecturer(Electrical Engineering)

12/1/24

Signature of Faculty

Lect. (ETC)