

Discipline	Semester	Name of the teaching faculty
Electrical Engineering	4th	U. SHU
Subject	NO. of days per week class	Semester from date: - 14.02.2022 To date: - 10.06.2022 NO. of weeks: - 15
Analog Electronics & OP-Amp	all	

Months	Weeks	Class day	Theory Topics
March	2nd	1st	P-N junction Diode.
		2nd	Working of Diode.
	3rd	1st	V-I characteristic of PN junction Diode.
		2nd	DC load line
		3rd	Ideal Diode, Knee voltage
		4th	Junctions breakdown, Zener breakdown, Avalanche breakdown.
	4th	1st	P-N Diode clipping ckt.
		2nd	P-N Diode clamping ckt.
		3rd	Thermistors, Sensors, barretters.

Months	Week	class day	Theory Topics
		4th	Zener Diode
		5th	Tunnel Diode
	5th	1st	PN Diode, classification of rectifiers.
	2nd		Analysis of halfwave rectifier. calculate DC o/p current, voltage, RMS output current & voltage, Rectifier efficiency, Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage.
	3rd		Analysis of Full wave centre-tapped rectifier and calculate DC o/p current & voltage. Rectifier efficiency, Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage.
	4th		Analysis of full wave Bridge rectifier and calculate DC o/p current & voltage. Rectifier efficiency, Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage.

Months	Weeks	class day	Theory Topics
April	1st	1st	Filters, Shunt capacitor Filter, choke input filter, π filter
		2nd	Principle of Bipolar junction transistor.
		3rd	Different modes of operation transistor.
		4th	Current components in a transistor. Transistor as an amplifier.
		5th	Transistor Ckt. configuration & its characteristics. CB, CE, CC configuration.
	2nd	1st	Transistor Biasing, Stabilization
		2nd	stability factor
		3rd	Different Method of Transistor Biasing.
		4th	Base resistor Method
		5th	collector to base bias
	3rd	1st	Self bias or Voltage divider Method.
		2nd	Practical Ckt. of transistor amplifier.

Months	Weeks	class day	Theory topics
		3rd	DC load line & DC equivalent circuit.
		4th	AC load line & AC equivalent circuit.
4th	1st		calculation of gain, phase reversal
	2nd		H-Parameters of transistors
	3rd		Simplified H-Parameters of transistors
	4th		Generalised approximate model.
May	1st	1st	Analysis of CB, CE, CC amplifier using generalised approximate model.
		2nd	Multistage, transistor amplifier
		3rd	R-C Coupled amplifier
		4th	Transformer coupled amplifier
	2nd	1st	Feedback in amplifier
		2nd	General Theory of feedback.
		3rd	Negative feedback circuit. Advantage of negative feedback.

Months	Weeks	class day	Theory topics	
		4th	Power amplifiers & its classification	
		5th	Difference between voltage amplifier and power amplifier. Classification of power amplifier.	
	3rd	1st	Transformer couple Class A power amplifiers. Class A Push-Pull amplifier Class B Push-Pull amplifier	
			Oscillators, Types of Oscillators Essentials of transistor oscillator.	
		4th	1st	Principle of operation of tuned collector & Hartley oscillator.
		2nd	Colpitts, phase shift, Wein bridge oscillator.	
		3rd	Classification of FET	
		4th	Advantages of BJT, principle of operation of BJT.	
		5th	FET parameters (1) DC drain resistance (2) AC drain resistance	

Month Weeks, clauchy Theory Topics

3) Transconductance

5th 1st Biasing of FET

2nd General ckt. Simple of OP-Amp
& IC-CA-741 OP-Amp.

3rd Operational amplifier stages.

June 1st 1st Equivalent ckt. of operational amplifier

2nd open loop OP-Amp configuration.

3rd OP-AMP with feedback.

2nd 1st Inverting, Non-inverting OP-Amp.

2nd Voltage follower & buffer

3rd Adder or summing amplifier

4th Subtractor, Integrator ckt.

5th Differentiator, Comparator ckt.