

GOVERNMENT CO-ED POLYTECHNIC, RAIPUR

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Name of the faculty :- **Abhijeet Yadav**
 Semester :- 3RD
 Subject **Basic Electronics (2025375(025))**
 Lesson Plan Duration (CL+LI+SL) :- **75**

S.No.	No. Of Periods	Topic Name	Practical	Remarks
	(Approx.Hrs: CI+ LI =17)	Unit-1.0 Semiconductor Diode		
1	3	pn- Junction diode: working, formation of depletion layer, construction, symbol and equivalent circuits of pn-Junction diode.	LE1.1 Test the performance of pn-Junction diode in the forward and reverse biased condition. LE-1.2 Identify the different refrigeration system and components in various application systems such as air conditioner, domestic refrigerator, water cooler etc.	10/09/24 11/09/24 12/09/24
2	2	Barrier potential voltage, forward and reverse biasing, V-I characteristics of diode.		13/09/24 17/09/24
3	3	Diode current equation, Static and Dynamic resistance, Diode capacitance	LE-1.3 Measure different operating parameters like pressure, temperature, humidity, velocity etc at different locations in a given system.	18/09/24 19/09/24 20/09/24
4	4	Symbol, working and characteristic of other diodes like: LED, Photo diode		21/09/24 23/09/24 24/09/24
5	2	Symbol, working and characteristic of other diodes like: Varactor diode		26/09/24 27/09/24 28/09/24
	(CI-14,LI-3)	14 class		
	(Approx. Hrs: CI+ LI =13)	Unit-2 Rectifiers and Filters		
1	2	Need for rectification, rectifier Parameters, PIV, Ripple factor, Efficiency, Peak Inverse Voltage(PIV), Transformer utilization factor(TUF) of rectifiers	LE2.1 Test the input and output waveform of Half Wave Rectifier a) without filter b) with filter LE2.2 Test the input and output waveform of full Wave center tapped Rectifier	30/09/24 1/10/24
2	1	Types of rectifier: Half Wave Rectifier	a) without filter	3/10/24

3	2	Full Wave rectifier	b) with filter	6/10/24
4	2	Center taped and Bridge type full wave rectifier	LE2.3 Test the input and output waveform of full Wave Bridge Rectifier	7/10/24
5	3	Filter Circuits: L-filter, C-filter, LC-filter, CLC filter	a) without filter b) with filter	8/10/24 9/10/24 14/10/24 15/10/24 16/10/24
		(CL-10,LI-3)	10 - CI + 1 Assignment discussion class	
		(Approx. Hrs: CI+ LI =14)	Unit-3 Diode Circuits	
1	2	Zener diode: working, construction and equivalent circuits of Zener diode	LE3.1 Test the performance of Zener diode.	18/10/24 19/10/24
2	2	Zener and avalanche breakdown phenomenon, Zener diode as voltage regulator	LE3.2 Test the output of the given Zener voltage regulator.	21/10/24 22/10/24
3	3	Clipper: Function of clipper circuit, types of clipper :positive and negative clipper circuit	LE3.3 Test the output waveform of a) Positive Clipper b) Negative Clipper	23/10/24
4	3	Clamper: Function of clamper, types of clamper, positive and Negative clamper circuits.	LE3.4 Test the output waveform of a) Positive Clamper b) Negative Clamper	24/10/24 4/11/24
		(CL-10,LI-4)	10 - CI	
		(Approx. Hrs: CI+ LI =16)	Unit-4 Bipolar Junction Transistor (BJT) and Field effect transistor (FET)	
1	2	BJT: Working, types of BJT ; NPN and PNP, construction and operation of NPN and PNP transistor.	LE4.1 Determine the current gain of CE configuration with the help of input output characteristics of CE configuration.	11/11/24 14/11/24
2	2	Modes of operation : active, saturation and cutoff, current amplification factor β and α	LE4.2 Determine the current gain of CB configuration with the help of input output characteristics.	16/11/24 18/11/24
3	2	Transistor biasing: need for biasing, types of biasing, thermal runaway	LE4.3 Determine the current gain of CC configuration with the help of input output characteristics.	19/11/24 → Doubt class
			LE4.4 Build and test the operation	20/11/24 21/11/24
				17/10/24 → Assignment
				9/11/24 → Assignment

4	3	Transistor configurations: Common Emitter(CE), Common Base(CB) and Common collector configuration circuit, working and input and output characteristics.	of BJT as a switch. LE4.5 Bias the given NPN transistor in the active region by voltage divider biasing method. LE4.6 Test the performance of the given FET.	22/11/24 23/11/24 25/11/24
5	2	Field Effect Transistor(FET): Working, construction, input and output characteristics, drain current, pinch-off voltage		26/11/24 27/11/24 29/11/24 30/11/24 } → Test & Doubt class
(CL-11,LI-5)		CI-11		

(Approx. Hrs: CI+LI = 15)		Unit-5 Introduction to Operational Amplifier(Op-Amp)		
1	2	Basics of differential amplifier, Working principle, input and output characteristics.	LE5.1 Test the performance of the given Op-Amp IC in inverting mode.	2/12/24 3/12/24
2	2	Basics of Op-Amp: OP-AMPIC-741, functional block diagram, virtual ground, configurations of working :inverting and non-inverting, parameters : I/O resistance, gain, slew rate, bandwidth, power.	LE5.2 Build and test Op-Amp based summing amplifier.	5/12/24 6/12/24 7/12/24 → Revision class
3	6	Applications op-amp : Summing, multiplier, and divider amplifier, integrator and differentiator, Log and Anti-Log amplifier.	LE5.3 Test the output of non-inverting amplifier. LE5.4 Test the performance of Op-Amp based integrator and differentiator circuit. LE5.5 Build and test the performance of Instrumentation amplifier.	9/12/24 10/12/24 11/12/24 12/12/24 13/12/24 14/12/24
(CL-10,LI-5)		10		

Number of Total periods planned : 75

Number of Total periods actually taken : 55

Subject Teacher : Abhijeet Yadav



HOD

(Department of Electrical Engineering)

