PNS SCHOOL OF ENGG. &+A1:C9 TECH., MARSHAGHAI DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING
LESSON PLAN 2024-2025

BRANCHE: (Electrical)	SEMESTER : 4TH	NAME OF TEACHING FACULTY : ER. AMARENDRA SAHOO
SUBJECT: : Th.4. Analog Electronics and OP-AMP	NO. OF DAYS/ PER WEEK CLASS ALLOTTED : 05	SEMESTER FROM DATE : 04.02.2025 TO 17.05.2025 NO. OF WEEKS : 14

WEEK	CLASSDAY	THEORY TOPICS
1ST	1st	D. Course Content: P-N JUNCTION DIODE: P-N Junction Diode
	2nd	Working of Diode V-I characteristic of PN junction Diode.
	3rd	DC load line Important terms such as Ideal Diode, Knee voltage
	4th	Junctions break down. Zener breakdown Avalanche breakdown
	5th	Avalanche breakdown
2ND	1st	P-N Diode clipping Circuit.
	2nd	P-N Diode clamping Circuit
	3rd	SPECIAL SEMICONDUCTOR DEVICES: Thermistors, Sensors & barretters
	4th	Zener Diode Tunnel Diode PIN Diode
	5th	DOUBT CLEARING CLASS
3RD	1st	RECTIFIER CIRCUITS & FILTERS:
	2nd	full wave centre tapped and Bridge rectifiers
	3rd	calculate: DC output current and voltage
	4th	RMS output current and voltage
	5th	Rectifier efficiency
4TH	1st	Ripple factor
	2nd	Regulation
	3rd	Transformer utilization factor
	4th	Peak inverse voltage
	5th	Filters:
5TH	1st	Choke input filter
	2nd	π filter /DOUBT CLEARING CLASS
	3rd	TRANSISTORS: Principle of Bipolar junction transistor
	4th	Current components in a transistor
	5th	Different modes of operation of transistor
6TH	1st	Current components in a transistor
	2nd	Transistor as an amplifier
	3rd	Transistor circuit configuration & its characteristics *CB Configuration*
	4th	CE Configuration CC Configuration

	5th	TRANSISTOR CIRCUITS: Transistor biasing Stabilization
7TH	**1st**	Stability factor
	2nd	Base resistor method Collector to base bias
	3rd	TRANSISTOR AMPLIFIERS & OSCILLATORS:
	4th	Practical circuit of transistor amplifier
	5th	DC load line and DC equivalent circuit
8TH	**1st**	AC load line and AC equivalent circuit
	2nd	Calculation of gain
	3rd	Phase reversal/DOUBT CLEARING CLASS
	4th	H-parameters of transistors
	5th	Simplified H-parameters of transistors
9TH	**1st**	Generalised approximate model
	2nd	R.C. coupled amplifier
	3rd	Transformer coupled amplifier
	4th	Feed back in amplifier General theory of feed back
	5th	Negative feedback circuit Advantage of negative feed back
10TH	**1st**	Power amplifier and its classification
	2nd	Difference between voltage amplifier and power amplifier
	3rd	Transformer coupled class A power amplifier
	4th	Class A push – pull amplifier
	5th	Class B push – pull amplifier
11TH	**1st**	Oscillators Types of oscillators
	2nd	Principle of operation of tuned collector,
	3rd	Hartley, colpitt, phase shift,
	4th	weinbridge oscillator (no mathematical derivations)
	5th	FIELD EFFECT TRANSISTOR: Classification of FET Advantages of FET over BJT
12TH	**1st**	Principle of operation of BJT
	2nd	FET parameters (no mathematical derivation) DC drain resistance
	3rd	7.4.2 AC drain resistance
	4th	AC drain resistance Trans-conductance
	5th	Biasing of FET
13TH	**1st**	. OPERATIONAL AMPLIFIERS: General circuit simple of OP-AMP and IC – CA – 741 OP AMP
	2nd	8.2 Operational amplifier stages
	3rd	Equivalent circuit of operational amplifier
	4th	Open loop OP-AMP configuration
	5th	Inverting OP-AMP DOUBT CLEARING CLASS
	1st	Non inverting OP-AMP

14TH	**2nd**	Differential amplifier Adder or summing amplifier
	3rd	Sub tractor
	4th	8.9.4 Differentiator
	5th	DOUBT CLEARING CLASS

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