LESSON PLAN 4TH SEMESTER(2024-25)				
SUBJECT-Th2.		ANALOG ELECTRONICS AND OP-AMP		
NAME OF THE FACULTY-		SOURABH S. NANDA & TUKURAJ SOREN		
Date-	04-02-2025 To 17-05-2025			
MONTH	MODULE/UNIT	COURSETOBECOVERED	TOTAL NO.OF CLASS	REMARK
FEB	**UNIT-1**	**1P-NJUNCTIONDIODE**	**06**	
		1.1P-NJunctionDiode 1. 2Working of Diode	01	
		1. 3 V-1 characteristic of PN junction Diode. V-1characteristicofPNjunction Diode	01	
		1.4DCloadline 1.5Importanttermssuchas Ideal Diode, Knee voltage	01	
		1.6Junctionsbreakdown. Zener breakdown Avalanche breakdown	01	
		1. 7P-NDiodeclipping Circuit.	01	
		1.8P-NDiodeclampingCircuit	01	
FEB	**UNIT-2**	**2.SPECIALSEMICONDUCTOR DEVICES**	**05**	
		2.1Thermistors,Sensors &barretters	02	
		2. 2ZenerDiode	01	
		2.3TunnelDiode	01	
		2.4PIN Diode	01	
MARCH	**UNIT-3**	**3.RECTIFIER CIRCUITS &FILTERS**	**07**	
		3.1Classificationofrectifiers	01	
		3.2Analysis of half wave,full wave centre tapped and Bridge rectifiers	01	
		3.2.1DCoutputcurrentandvoltage	01	
		RMS output current and voltage Rectifier efficiency	01	

		3.2.4Ripplefactor 3.2.5Regulation	01	
		Transformer utilization factor Peak inverse voltage	01	
		Filters: Shunt capacitor filter Choke input filter Π filter	01	
MARCH	**UNIT-4**	**4.TRANSISTORS**	**07**	
		4.1PrincipleofBipolar junction transistor	01	
		4.2Differentmodesofoperation of transistor	01	
		4.3 Current components in a transistor	01	
		4.4Transistorasanamplifier	01	
		Transistor circuit configuration & its characteristics CB Configuration CE Configuration CC Configuration	03	
APRIL	**UNIT-5**	**5. TRANSISTORCIRCUITS**	**07**	
		5.1Transistor biasing	01	
		5.2Stabilization	01	
		5.3Stabilityfactor	01	
		Different method of Transistors Biasing Base resistor method Collector to base bias Self bias or voltage divider method	04	
APRIL	**UNIT-6**	**6.TRANSISTORAMPLIFIERS & OSCILLATORS**	**13**	
		Practical circuit of transistor amplifier DC load line and DC equivalent circuit	01	
		AC load line and AC equivalent circuit Calculation of gain	01	
		Phase reversal H-parameters of transistors	01	

		6.7 Simplified H-parameters of transistors	01	
		Generalised approximate model Analysis of CB, CE, CC amplifier using generalised approximate model	01	
		6.9 Analysis of CB, CE, CC amplifier using generalised approximate model	01	
		6.10Multistagetransistoramplifier 6.10.1R.C. coupled amplifier 6.10.2Transformer coupled amplifier	02	
		Feedback in amplifier General theory of feedback Negative feedback circuit Advantage of negative feed back	01	
		Power amplifier and its classification Difference between voltage amplifier and power amplifier	01	
		Transformer coupled class A power amplifier Class A push-pull amplifier 6.12.4ClassBpush-pullamplifier	01	
		Oscillators 6.13.1Typesof oscillators Essentials of transistor oscillator Principle of operation of tuned collector, Hartley, colpitt, phase shift, wein• bridge oscillator(no Mathematical derivations)	02	
MAY	**UNIT-7**	**7.FIELDEFFECT TRANSISTOR**	**06**	
		7.1ClassificationofFET	01	
		Advantages of FET over BJT Principle of operation of BJT	02	
		FET parameters (no mathematical derivation) DC drain resistance AC drain resistance Trans-conductance	02	
		7.5BiasingofFET	01	

MAY	UNIT-8	8.PERATIONALAMPLIFIERS	09Z	
		8.1Generalcircuitsimpleof OP-AMP and IC -CA-741OPAMP	01	
		8.2Operationalamplifier stages 8.3Equivalentcircuit of Operational amplifier	01	
		8.4 Open loop OP-AMP configuration	01	
		OP AMP with feedback Inverting OP-AMP	01	
		8.7Noninverting OP-AMP	01	
		8.8Voltagefollower&buffer	01	
		Differential amplifier Adder or summing amplifier Sub tractor Integrator Differentiator Comparator	03	

24/02/25 04/02/2025
Teacher's Signature

HOD.EE 04/02/2025