

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2022-2023

Discipline: Electrical Engineering Engg. Semester: 4th

Name of the Teaching Faculty: Niranjan Behera

Analog Electronics & OP-amp.

Subject: Analog ETC & OP-amp No. of Days/per week class allotted 04

Semester From Date: 14/02/2023 To Date: 23/05/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
01	01	P-n Junction diode
	02	Working of diode
	03	V-I characteristic of P-n Junction diode
	04	D-c load line
02	05	Ideal diode, Knee voltage, Break down voltage
	06	clipping and clamping circuit
	07	Thermistor, sensor and barretters
	08	Zener diode
03	09	Tunnel diode
	10	PIN diode
	11	Revision of the chapter I and II
	12	Rectifier and classification of rectifier

Nirmayan Behera
Signature of the Faculty

Subject: Analog ETC. & OP-AMP No. of Days/per week class allotted 01

Semester From Date: 11/02/2023 To Date: 29/05/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
04	13	Half wave rectifiers and efficiency of Half wave rectifier.
	14	Full wave rectifiers (center tap full wave rectifier).
	15	Bridge type full wave rectifier
	16	Efficiency and ripple factor of full wave and half wave rectifier
05	17	Filter and different type of filter
	18	Principle of Bipolar Junction Transistor (BJT)
	19	Different modes of operation of transistor C
	20	Working of P-N-P and N-P-N transistor
06	21	Transistor as an amplifier
	22	Current component in a transistor
	23	Transistor circuit configuration & characteristic of common-base (CB)
	24	common-emitter configuration (CE)

Nisargam P. Kulkarni
Signature of the Faculty

Subject: Analog ETE & Op-amp No. of Days/per week class allotted 04

Semester From Date: 19-09-2023 To Date: 23-05-2023 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
07	25	Common-collector configuration
	26	Transistor biasing
	27	Stabilization
	28	Stability factor
08	29	Different type of Biasing
	30	Base resistor biasing
	31	Feedback resistor biasing
	32	voltage divider biasing
09	33	Practical circuit of transistor amplifier
	34	Dc load line and Dc equivalent circuit
	35	Ac load line and Ac equivalent circuit calculation of gain
	36	Phase reversal, H-parameters of transistors

Niranjana Behera
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Semester From Date: 14/02/2023 To Date: 23/05/2023 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
10	37	Simplified H-Parameter of transistor Generalised approximate model
	38	Analysis of CB, CE & CC amplifier using generalised approximate model
	39	Multi-stage transistor amplifier
	40	R-C coupled and transistor coupled amplifier
11	41	Feedback amplifier and classification Difference between voltage and power amplifier
	42	Advantage of negative feedback
	43	Transformer coupled class-A amplifier push-pull amplifier
	44	Oscillator & types. Essentials of transistor oscillators
12	45	Different types of oscillator. Tuned collector Hartley, Colpitts, Phase Shift osc.
	46	Wein-bridge oscillator Field Effect Transistor (FET)
	47	Advantage of FET over BJT
	48	Principle of operation of FET

Niranjana Behara

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Semester From Date: 14/02/2023 To Date: 23/05/2023 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
13	49	FET parameters 1. DC drain resistance 2. AC drain resistance 3. Transconductance
	50	Biasing of FET
	51	Revision of FET
	52	Operational amplifier (OP-amp) Block diagram & Equivalent ckt. of op-amp
14	53	Open-loop OP-amp configuration
	54	Closed loop OP-amp configuration Inverting OP-amp
	55	Non-inverting OP-amp, voltage follower & buffer differential amp.
	56	Adder or summing amplifiers
15	57	Subtractor, Integrator
	58	Differentiator and comparator
	59	Revision of OP-amp
	60	Revision and question discussion

Niranjan Behara
Signature of the Faculty