MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.)

A Govt. Added UGC Autonomous and NAAC Accredited Institute, Affiliated to R.G.P.V, Bhopal

DEPARTMENT OF ELECTRONICS ENGINEERING

Multiple Mode Teaching Learning Pattern

Name of Course with Code: Basic Electrical and Electronics Engg (10022)	**Class:** B. Tech. I Year Elex	**Session:** Jan-June 2023

S. No.	Unit	Content to be Covered	Teaching Session	Mode
1.	Unit 1	Introduction to D.C. Circuits Analysis	1	Offline & Open discussions
2.		Voltage and Current Sources: Dependent and independent source,	2-3	Offline & problem solving based learning
3.		Source conversion, Kirchhoff' s Law, Mesh and Nodal analysis	4-5	Offline & problem solving based learning
4.		Network theorems, Superposition theorem, Thevenin's theorem	6-7	Offline & problem solving based learning
5.		Thevenin's & Norton's theorem and their applications.	8-9	Offline & problem solving based learning
6.	Unit 2	Generation of sinusoidal AC voltage	10	Online & demonstration based learning
7.		Average value, R.M.S. value, Form factor and Peak factor of AC quantity	11-12	Offline & problem solving based learning
8.		Concept of Phasor, analysis of R-L, R-C, R-L-C Series and Parallel circuit	13-14	Offline & problem solving based learning
9.		Power and importance of Power factor.	15	Online & demonstration based learning
10.	Unit 3	Basics of Magnetic Circuits	16	Online & demonstration based learning
11.		AC excitation in magnetic circuits, self-inductance and mutual inductance	17	Online & demonstration based learning
12.		Induced voltage, laws of electromagnetic Induction	18-19	Offline & problem solving based learning
13.		Direction of induced E.M.F. Flux, MMF and their relation, analysis of magnetic circuits..	20-24	Offline & problem solving based learning
14.	Unit 4	Single-phase Transformer &Rotating Electrical Machines	25	Online & demonstration based learning
15.		construction and working principal, Ideal Transformer and its phasor diagram at No Load	26	Offline & problem solving based learning
16.		Voltage, current and impedance	27-29	Offline & problem solving

		transformation, Equivalent circuits and its Phasor diagram, voltage regulation.		based learning
17.		losses and efficiency, testing of transformers, Construction & working principle of DC and AC machine.	30-31	Offline & demonstration based learning
18.	**Unit 5**	Number systems used in digital electronics, decimal, binary, octal, hexadecimal, their complements.	32	Offline & Open discussions
19.		Demorgan's theorem, Logic gate symbolic representation and their truth table.	33	Offline & problem solving based learning
20.		Introduction to semiconductors, Diodes, V-I characteristic, Bipolar junction transistors.	34-35	Offline & problem solving based learning

Online	Offline						
	Black Board Teaching	Group based Learning	Learning through projects	Learning through demonstration	Learning through experimentation	Activity based Learning	Onsite/field based learning
14.28%	85.71%	37.21%	13.95	27.90%	48.84.%	13.95%	-%

Dr. Vikas Mahor