GOVERNMENT CO.ED POLYTECHNIC RAIPUR (C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN – 3rd Sem

Session July - Dec 2024

Session start as per university calendar 3.11.24

Course Name: DC Machines and Transformers

Name of Subject Teacher – Lakeshwar Prasad Sahu

Lecturer plan T+P = 4

Course code: 2024373(024)

Discipline: EE, EEE	Semester: 3RD						Class room Instruction Start Date: 11/09/24	
S.No.	Chapter No.	Topics	Sub Topic to be covered under this unit	Total hours	No. of periods planned	Actual No of periods taken	Date of Class Conduction	Remarks if any
1	1	Basics of DC Machines	Law of conservation of energy	15	3	2	29/11/24 03/12/24	
			Electromagnetic Induction, Faraday's laws of electromagnetic induction, Lenz's Law -		4	3	4/12/24 6/12/24 7/12/24	
			Fleming's right and left hand rule DC machines construction, its parts		4	3	9/12/24 10/12/24 11/12/24	
			EMF equations : EMF, Back EMF		4	3	12/12/24 13/12/24 16/12/24	19/12/24 Revision Class
2	2	DC Generators	Working and applications of different types of DC generator (DC series, and DC shunt)	15	3	2	16/10/24 17/10/24	
			EMF equation		3	2	18/10/24 19/10/24	
			Performance of DC generators- -Efficiency, losses		2	2	20/10/24 21/10/24	
			Condition for building up EMF in self excited generator		3	2	23/10/24 24/10/24	
			Internal and external characteristics		2	2	4/11/24 5/11/24	
			Concept of Armature reaction and its effects		2	2	6/11/24 8/11/24	
			Working and applications of different types of DC Motors (DC series and DC shunt motor)		3	2	9/11/24 14/11/24	
			EMF equation, Back EMF, Torque, speed, Output power, Losses and efficiency		3	2	16/11/24 18/11/24	

3	3	DC Motor	Need of starters and types (two and three point only)	15	3	2	19/11/24 20/11/24	
			Compare the performance of Series and Shunt		3	2	21/11/24 22/11/24	
			Speed control methods of DC shunt and series motor		3	2	23/11/24 26/11/24	
4	4	Single Phase Transformer	Working Principle, construction, Types - Shell and Core	15	3	2	11/09/24 12/09/24	
			EMF equation, Voltage and Current Transformation ratio, Equivalent circuit parameters,		3	2	13/09/24 14/09/24	
			Losses: Iron loss- Hysteresis and eddy current, Copper loss		3	2	17/09/24 18/09/24	
			Parallel operation of two single phase transformers, Essential and desirable conditions		3	2	19/09/24 20/09/24	
			Efficiency, Condition for maximum efficiency and voltage regulation for lagging load only		3	3	21/09/24 25/09/24 26/09/24	
5	5	Poly phase Transformer	Formulation of three phase transformer by three single phase transformers	15	4	3	27/09/24 28/09/24 30/09/24	
			3 phase Star/delta connection		4	3	1/10/24 3/10/24 4/10/24	
			Cooling methods of Power transformers		4	3	7/10/24 8/10/24 9/10/24	
			Parallel operation of two three phase transformers		3	2	14/10/24 15/10/24	
				75 Hours				

Number of Total Periods Planned: 75 (CI+LI)
Number of Total Periods actually taken: 56 (CI)

Subject Teacher:- Mr. Lakeshwar Prasad Sahu.

HOD Signature