	GOVERNMENT POLYTECHNIC, PURI	
	DEPARTMENT OF ELECTRICAL ENGINEERING	
Discipline: **ELECTRICAL ENGG**	Semester:4TH	Name of the Teaching Faculty: **MR K KRISHNA, PTGF IN ELECTRICAL ENGG.**
Subject: **ELECTRICAL MACHINE LAB-1**	No. of days/per week class allotted: **06**	Semester From date: 10.03.2022 To Date:01.07.2022 No. of weeks:15
PRE- REQUISITE	Basic knowledge of DC & AC analysis Theory, Phasor Diagram, engineering mathematics,motor principle and generator principle. Basic knowledge of different types of tools and equipments.	
COURSE OUTCOMES	**CO1.**Practically familiar with constructional features, terminal testing, insulation testing of D.C Machines and Transformers. **CO2.**Practically demonstrate the starting and speed control of D.C machines. **CO3.**Gain practical knowledge on machines by determination of efficiency and voltage regulation. **CO4.**Practically perform study on performance of D.C machines and load sharing of Transformers. **CO5.**Practically familiar with different testing of transformers (SC test, OC test and polarity test)	

Week	Class Day	Theory / Practical Topics	DELIVERY METHOD
1st	1st	Identification of different terminals of a DC machine by test lamp method and multi-meter method & to measure insulation resistance by megger.	LAB
	2nd	Identification of different terminals of a DC machine by test lamp method and multi-meter method & to measure insulation resistance by megger.	LAB
2nd	1st	Dimensional and material study of various parts of a DC machine.	LAB
	2nd	Dimensional and material study of various parts of a DC machine.	LAB
3rd	1st	Plot OCC of a DC shunt generator at constant speed and determine critical resistance from the graph.	LAB
	2nd	Plot OCC of a DC shunt generator at constant speed and determine critical resistance from the graph.	LAB
4th	1st	Plot External Characteristics of a DC shunt generator at constant speed.	LAB
	2nd	Plot External Characteristics of a DC shunt generator at constant speed.	LAB
5th	1st	Study of Three point starter, connect and run a DC shunt motor & measure the no load current.	LAB
	2nd	Study of Three point starter, connect and run a DC shunt motor & measure the no load current.	LAB
6th	1st	Study of Four point starter, connect and run a DC compound motor & measure no load current.	LAB
	2nd	Study of Four point starter, connect and run a DC compound motor & measure no load current.	LAB
7th	1st	Control the speed of a DC shunt motor by field flux control method & armature voltage control method.	LAB
	2nd	Control the speed of a DC shunt motor by field flux control method & armature voltage control method.	LAB
8th	1st	Determine the armature current vs. speed characteristic of a DC motor 9. Determine	LAB
	2nd	Determine the armature current vs. speed characteristic of a DC motor 9. Determine	LAB
9th	1st	Determine the efficiency of a DC machine by brake test method.	LAB
	2nd	Determine the efficiency of a DC machine by brake test method.	LAB

10th	1st	Identification of terminals, determination of voltage transformation ratio of a single phase transformer.	LAB
	2nd	Identification of terminals, determination of voltage transformation ratio of a single phase transformer.	LAB
11th	1st	Perform OC Test and SC test of a single phase transformer.	LAB
	2nd	Perform OC Test and SC test of a single phase transformer.	LAB
12th	1st	etermine the voltage regulation of a single phase transformer at different loads.	LAB
	2nd	etermine the voltage regulation of a single phase transformer at different loads.	LAB
13th	1st	13. Polarity test of single phase transformer and parallel operation of two single phase transformers.	LAB
	2nd	13. Polarity test of single phase transformer and parallel operation of two single phase transformers.	LAB
14th	1st	Revision of practical Experiments	LAB
	2nd	Revision of practical Experiments	LAB
15th	1st	Revision of practical Experiments	LAB
	2nd	Revision of practical Experiments	LAB

LEARNING RESOURCES:

1. Laboratory courses in Electrical Engineering S G Tarnekar; P K Kharbanda; S D Naik et.al S.Chand

K. Krishna 10/08/22
Sign. of Faculty concerned

17/8/22
Principal
G.P Puri

17/8/22
Sign. of HOD i/c