Electrical Machines-II Lab

Course Code	19EE3551	Year	III	Semester	I
Course Category	Professional Core	Branch	EEE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisite	Electrical Machines-I Lab (19EE3451) and Basic Electrical and Electronics Engineering Lab (19ES1151)
Continuous Internal Evaluation:	25	Semester End Evaluation:	50	Total Marks:	75

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	**Understand** the performance of three phase and single phase induction motor. (L2)
CO2	**Analyze** the performance of the alternator and predetermine the regulation. (L4)
CO3	**Classify** the 'V' & ' Λ ' curves of synchronous motor (L3)
CO4	**Obtain** the synchronous machine parameters and understand the performance of special machines such as three phase schrage motor (L3)

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3		2			1			2			2	3	2
CO2	3		2			1			2			2	3	2
CO3	3		2			1			2			2	3	2
CO4	3		2			1			2			2	3	2

Syllabus		
Unit No.	**Contents**	**Mapped CO**
1.	Brake test on three phase Induction Motor	CO1
2.	No–load & Blocked rotor tests on three phase squirrel cage induction motor	CO1
3.	Equivalent circuit of a three phase induction motor and measurement of slip power.	CO1
4.	Equivalent circuit of a single phase induction motor	CO1
5.	Brake test on single phase induction motor	CO1
6.	Regulation of a three-phase alternator by synchronous impedance method	CO2
7.	Regulation of a three-phase alternator by mmf method.	CO2
8.	Regulation of a three-phase alternator by Z.P.F. method	CO2
9.	Measurement of sequence impedance of a three-phase alternator	CO2
10.	' V ' & 'Λ ' curves of a three-phase synchronous motor.	CO3
11.	Determination of Xd and Xq of a salient pole synchronous machine	CO4

12.	Brake test on three phase Schrage motor.	CO4
13.	Determination of performance of induction generator	CO1

Learning Resources

Text Books

1. Dr.P. S Bimbhra-Electrical Machinery-7/e -Khanna Publishers,2018.
2. I.J. Nagarath and D.P. Kothari, ―Electric Machines, 4/e, McGraw Hill,2010.
3. A.E. Fitzgerald, Charles Kingsley Jr. Stephen D. Umans, ‒Electric Machinery 7/e, McGraw,Hill.,2013