

**ELECTRICAL MACHINES-II LAB**

<b>Course Code</b>	20EE3451	<b>Year</b>	II	<b>Semester(s)</b>	II
<b>Course Category</b>	Professional Core	<b>Branch</b>	EEE	<b>Course Type</b>	Lab
<b>Credits</b>	1.5	<b>L-T-P</b>	0-0-3	<b>Prerequisite</b>	Electrical Machines-I Lab
<b>Continuous Internal Evaluation:</b>	15	<b>Semester End Evaluation:</b>	35	<b>Total Marks:</b>	50

<b>Course Outcomes</b>	
Upon successful completion of the course, the student will be able to	
<b>CO1</b>	Determine the performance of three phase induction machine (L3)
<b>CO2</b>	Determine the performance of single phase induction machine and special machines such as three phase schrage motor. (L3)
<b>CO3</b>	Analyze the performance of the alternator and predetermine the regulation. (L4)
<b>CO4</b>	Obtain the characteristics and parameters of synchronous machine (L3)
<b>CO5</b>	Conduct experiments as a team / individual by using equipment available in the laboratory
<b>CO6</b>	Make an effective report based on experiments

<b>Contribution of Course Outcomes towards achievement of Program Outcomes &amp; Strength of correlations (3:High, 2: Medium, 1:Low)</b>														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			3				3				3	3	1
CO2	3			3				3				3	3	1
CO3		3		3				3				3	3	1
CO4	3			3									3	1
CO5					3				3				3	1
CO6										3			3	1

<b>Syllabus</b>		
<b>S.No.</b>	<b>Contents</b>	
1.	Brake test on three phase Induction Motor	CO1
2.	No-load & Blocked rotor tests on three phase squirrel cage induction motor	CO5
3.	Equivalent circuit of a three phase induction motor.	CO6
4.	Equivalent circuit of a single phase induction motor.	CO2
5.	Brake test on single phase induction motor	CO5 CO6
6.	Regulation of a three-phase alternator by synchronous impedance method	CO3
7.	Regulation of a three-phase alternator by mmf method.	CO5
8.	Regulation of a three-phase alternator by Z.P.F. method	CO6
9.	Measurement of sequence impedance of a three-phase alternator	
10.	'V' & 'A' curves of a three-phase synchronous motor.	CO4
11.	Determination of $X_d$ and $X_q$ of a salient pole synchronous machine	CO5 CO6
12.	Brake test on three phase Schrage motor.	CO2 CO5 CO6
13.	Determination of performance of induction generator.	CO1 CO5 CO6

<b>Learning Resources</b>
---------------------------

<b>Text Books</b>
-------------------

- |   |
|---|
| <ol style="list-style-type: none"><li>1. Electrical Machinery by Dr.P. S Bimbhra, 7/e, Khanna Publishers,2018.</li><li>2. Electric Machines by I.J. Nagarath and D.P. Kothari,4/e, McGraw Hill, 2010.</li></ol> |
|---|