Course Name Electrical Machine-II Laboratory

Course Code EE591

Course Credit 2

Contact Hour 3P

Prerequisite Electrical Machine-I, Electrical Measurement

Course Objective

The objectives of this course are

1. To prepare the students to have a basic knowledge of synchronous machine and induction motor.
2. The ability to conduct testing and experimental procedures on different types of electrical machines.
3. To give a chance to students to perform different tests of electrical machine.
4. The capability to analyze the operation of electric machines under different loading conditions.

Course Outcome

On completion of the course students will be able to

1. Analyze the response of any electrical machines.
2. Troubleshoot the operation of an electrical machines.
3. Select a suitable measuring instrument for a given application.
4. Gain the knowledge of tests of synchronous machine and induction motor.

CO Mapping with departmental POs

H: High, M: Medium, L: Low

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	L	M		M								
CO 2		H		M					M			
CO 3		H		H	L				M			
CO 4		H		M								

Course Content

List of experiments

1. Different method of starting of 3 phase squirrel cage Induction motor & their comparison [D.O.L, Auto transformer & Star-Delta].
2. Speed control of 3 phase squirrel cage induction motor by different methods & their comparison [voltage control & frequency control].
3. Speed control of three phase slip ring Induction motor by rotor resistance control.
4. Determination of regulation of Synchronous machine by
    A. Potier reactance method.
    B. Synchronous Impedance method.
5. Determination of equivalent circuit parameters of a single phase Induction motor.
6. Load test on single phase Induction motor to obtain the performance characteristics.
7. To determine the direct axis reactance [X_d] & quadrature axis reactance [X_q] of three phase synchronous machine by slip test.

8. Load test on wound rotor Induction motor to obtain the performance characteristics.
9. To make connection diagram of full pitch & fractional slot winding of 18 slot squirrel cage Induction motor for 6 pole & 4 pole operation.
10. To study the performance of Induction generator.
11. Parallel operation of 3 phase Synchronous generators.
12. V-curve of Synchronous motor.