Course Name Electrical Machine-I Laboratory

Course Code EE491

Course Credit 2

Contact Hour 3P

Prerequisite Basic Electrical Engineering, Electrical Measurement

Course Objective

The objectives of this course are

1. To prepare the students to have a basic knowledge of d.c. machine, three phase induction motor and transformers.
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 different characteristics and tests of d.c. machine, induction motor and transformer.

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. Study of the characteristics of a separately excited D.C generator.
2. Studies of the characteristics of a D.C shunt motor.
3. Speed control of a D.C motor.
4. Study of the characteristics of a compound D.C generator (short shunt)
5. Measurement of the speed of a D.C series motor as a function of load torque.
6. Study of the equivalent circuit of a single-phase transformer.
7. Polarity test on single phase transforms and study of the different connections of three-phase transformer.
8. Study of the equivalent circuit of three-phase induction motor by No-Load & Blocked-Rotor tests.
9. Perform Sumpner's test of single phase transformer.
10. Speed control of three phase slip ring Induction motor by rotor resistance control.
11. Study of the performance of three-phase Squirrel-Cage induction Motor-Determination of Iron-Loss, Friction & Windage Losses.