

<b>EE4L1</b>	<b>2/4 B.Tech. FOURTH SEMESTER</b>	<b>Credits: 2</b>
<b>Lecture: -</b>	<b>ELECTRICAL MACHINES LAB – I</b>	<b>Internal assessment: 25 marks</b>
<b>Lab : 3 periods/week</b>		<b>Semester end examination: 50 marks</b>

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**Course Objective:**

In this lab students understand the performance of different types of DC generators and motors, and capable to analyze the operation of DC machines under different loading conditions.

**Course Outcomes:**

After completing the lab course, students will be able to understand and conduct the

1. Load test on different types of DC generators and determines their characteristics.
2. Brake test on different types of DC motors and determines their performance curves.
3. Tests to find efficiency of DC machines

**List of experiments**

**Any 10 of the following experiments are required to be conducted:**

1. Magnetization characteristics of DC shunt generator. Determination of critical field resistance and critical speed.
2. Load test on DC shunt generator. Determination of characteristics.
3. Load test on DC series generator. Determination of characteristics.
4. Load test on DC compound generator. Determination of characteristics.
5. Brake test on DC shunt motor. Determination of performance curves.
6. Brake test on DC compound motor. Determination of performance curves.
7. Brake test of DC series motor. Determination of performance curves.
8. Swinburne's test and predetermination of efficiencies as Generator and Motor.
9. Speed control of DC shunt motor by field and armature control.
10. Hopkinson's test on DC shunt machines. Predetermination of efficiency.
11. Fields test on DC series machines. Determination of efficiency.
12. Retardation test on DC shunt motor. Determination of losses at rated speed.
13. Separation of losses in DC shunt motor.