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| **Course Code** | **Course Name** | **L-T-P - Credits** |
| **EE 253** | **ELECTRICAL MACHINES-I LAB** |  **0-1-2 : 2** |
| **Prerequisite: Basic Electrical Engg. Corequisite: NIL** |
| **Course Objective:** To provide practical knowledge in verification of principles of electromagnetic induction & method of testing dc machines, transformers under different load conditions. Determining performance characteristics and validation of general properties of dc mcahines, transformers. |
| **Syllabus (List of Experiments)****Tutorial:**1. Design of closed type Armature winding
2. Determination of critical resistance & critical speed for dc shunt generators.
3. Determination of losses & Efficiency for dc shunt motors.
4. Determination of transformer’s current & terminal voltage for parallel operation of single phase transformers.

**Practical:**1. Sumpner’s Test on single phase transformers
2. Polarity test & OC-SC tests on single phase transformers
3. Parallel operation of single phase transformers
4. No load & external load tests on DC shunt generator
5. No load & external load tests on DC compound short-shunt generator
6. Speed control of DC shunt motor
7. Load Test on DC series motors
8. Load Test on DC shunt motors
9. Swinburne’s Test
10. Hopkinson’s Test
11. Verification of phasor group for three phase transformers.
12. Verification of Scott’s connection on three phase transformers.
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| **Supplementary Readings:**1. Say M. G., The performance and design of alternating current machines, CBS Publishers, Delh,

4th Edition,2004.2) Bimbhra P. S., Electrical Machinery, Khanna Pub., Delhi., 7th Edition, 20183) Clayton A. E., The performance and design of direct current machines, Pitman and sons, London. 4th Edition,19614) Bhag S. Guru, H. R. Hiziroglu, Electric Machinery and Transformers, Oxford, 4th Edition,2014  |
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