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| **Course Code** | **Course Name** | **L-T-P - Credits** |
| **EE 254** | **ELECTRICAL MACHINES-II LAB** |  **0-1-2 : 2** |
| **Prerequisite: Basic Electrical Engg., Electrical Machines-I Corequisite: NIL** |
| **Course Objective:** To provide practical knowledge in verification of principles of electromagnetic induction & method of testing AC machines under different load conditions. Determining performance characteristics and validation of general properties of AC mcahines. |
| **Syllabus (List of Experiments)****Tutorial:**1. Design of open type armature winding for 3-phase AC machines
2. Determination of voltage regulation for 3-phase cylindrical pole alternators

**Practical:**1. No load & blocked rotor tests on a three phase induction motor, finding rotational losses
2. Determining performance characteristics of three phase induction motor
3. Different starting schemes of three phase induction motor.
4. Speed control of 3-phase induction motor using variable rotor resistance
5. Distributed winding study for three phase induction motor.
6. Speed control of 3-phase induction motor using pole changing method
7. Voltage regulation of 3-phase cylindrical pole alternators using EMF method
8. Voltage regulation of 3-phase cylindrical pole alternators using ZPF method
9. V-curves of a synchronous motor
10. Synchronous motor as source & sink of reactive power
11. Parallel operation of alternators
12. Slip test on 3-phase salient pole synchronous machines.

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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  |