**20EE31P2-ELCTROMECHANICAL ENERGY CONVERSION –II LAB**

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| **Course Category:** | Professional Core | **Credits:** | 1.5 |
| **Course Type:** | Laboratory | **Lecture-Tutorial-Practical:** | 0-0-3 |
| **Pre-requisite:** | Electrical machines | **Sessional Evaluation:**  **External Exam Evaluation:**  **Total Marks:** | 40  60  100 |

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| **Course Objectives:** | Students undergoing this course are expected to learn: | |
| 1. About three phase transformers connections.  2. To connect the A.C windings for different pole machines.  3. The performance characteristics of three phase Induction motor  4. To obtain equivalent circuit characteristics of single phase induction  motor.  5. To obtain voltage regulation of alternators.  6. Performance of synchronous motor. | |
| **Course Outcomes:** | Upon successful completion of the course, the students will able to: | |
| **CO1** | Distinguish the regulation of alternators by various methods experimentally. |
| **CO2** | Connect and verify the A.C winding connections of different pole machines |
| **CO3** | Calculate the performance of A.C motors |
| **CO4** | Obtain Xd& Xq parameters experimentally |
| **CO5** | Apply the parallel operation of alternators |
| **CO6** | Obtain V and Inverted V curves of synchronous motor experimentally. |
| **Course Content:** | Minimum of 10 experiments to be conducted out of the following:  **LIST OF EXPERIMENTS**  1. 3-Ø to 2-Ø conversion using Scott connection.  2. 3-Ø transformer connections  3.2-pole and 4-pole winding connections of three phase Induction motor.  4. Circle diagram of 3-Ø induction motors  5. Equivalent circuit of 3-Ø induction motor  6. Load test on 3-Ø induction motor  7. Equivalent circuit of 1-Ø induction motor  8.Voltage regulation of an alternator using synchronous impedance and MMF method  9. Voltage regulation of an alternator using ZPF Method  10. Slip test  11. Parallel operation of two alternators  12. V and inverted V curves of synchronous motor | |