**23EE21P1- ELECTRICAL CIRCUIT ANALYSIS-II AND SIMULATION LAB**

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| **Course Category:** | Professional core | **Credits:** | 1.5 |
| **Course Type:** | Laboratory | **Lecture-Tutorial-Practical:** | 0-0-3 |
| **Pre-requisite:** | Basic concepts of Circuit theory, knowledge of Network Theorems & MATLAB Software | **Sessional Evaluation: External Exam Evaluation:**  **Total Marks:** | 30  70  100 |

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| **Course Objectives:** | Students undergoing this course are expected to learn : | | |
| 1. The power calculations in three phase circuits. 2. To analyze the time response of given network. 3. To determine two port network parameters. 4. To simulate and analyze electrical circuits using software tools 5. To apply various theorems to solve different electrical networks using simulation tools | | |
| **Course Outcomes:** | After completing the course the student will be able to: | | **Blooms level** |
| CO1 | Understand the power calculations in three phase circuits. | **L2** |
| CO2 | Analyze the time response of given network. | **L4** |
| CO3 | Determination of two port network parameters. | **L4** |
| CO4 | Simulate and analyze electrical circuits using software tools. | **L4** |
| CO5 | Apply various theorems to solve different electrical networks  using simulation tools | **L3** |
| **Course Content:** | Minimum of 10 experiments to be conducted out of the following:  **List of Experiments**   1. Measurement of Active Power and Reactive Power for balanced loads. 2. Measurement of Active Power and Reactive Power for unbalanced loads. 3. Determination of Z and Y parameters. 4. Determination of ABCD and hybrid parameters 5. Verification of Kirchhoff’s current law and voltage law using simulation tools. 6. Verification of mesh and nodal analysis using simulation tools. 7. Verification of super position and maximum power transfer theorems using simulation tools. 8. Verification of Reciprocity and Compensation theorems using simulation tools. 9. Verification of Thevenin’s and Norton’s theorems using simulation tools. 10. Verification of series and parallel resonance using simulation tools. 11. Simulation and analysis of transient response of RL, RC and RLC circuits. 12. Verification of self-inductance and mutual inductance by using simulation   tools. | | |