**17EE21P1-CIRCUITS & NETWORKS LAB**

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| **Course Category:** | Professional core | **Credits:** | 2 |
| **Course Type:** | Laboratory | **Lecture-Tutorial-Practical:** | 0-0-3 |
| **Pre-requisite:** | Basic concepts of Ohm’s Law, Kirchhoff’s Laws. Basic knowledge of Network Theorems is required. | **Sessional Evaluation:**  **External Exam Evaluation:**  **Total Marks:** | 40  60  100 |

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| **Course Objectives:** | To make the student learn about  1.The design and analysis of basic electric circuits.  2.The Network theorems.  3.Mutual inductance of coupled coils. | |
| **Course Outcomes:** | After completing the course the student will be able to | |
| CO1 | Analyse the electric circuits experimentally. |
| CO2 | Verify the theorems and determine the two port network parameters experimentally. |
| CO3 | Measure the power in single phase AC circuit |
| CO4 | Compute the resonance frequency, cut-off frequencies of the given RLC circuit experimentally. |
| CO5 | Find the step response of electric circuits & draw the locus diagram of the given circuit experimentally. |
| CO6 | Analyze and calculate the mutual inductance of coupled coils practically. |
|  | Minimum of 10 experiments to be conducted out of the following:  **List of Experiments**   1. Verification of Kirchhoff’s laws 2. Verification of Superposition theorem 3. Verification of Reciprocity theorem 4. Verification of Maximum power transfer theorem 5. Determination of Two-Port network parameters 6. Measurement of Mutual inductance 7. Locus diagram of RC series circuit 8. Measurement of Power using Wattmeter 9. Verification of Thevenin’s theorem 10. Resonance in RLC series circuit 11. Measurement of Time constant & Rise time in a RC series circuit 12. Measurement of Power using a) 3-ammeter method b) 3-voltmeter   method | |