ELECTRICAL CIRCUIT ANALYSIS LAB

(Core Subject)

Course Code:	10B17EC171	Semester:	1st Semester, B. Tech (ECE/CSE/IT/CE)
Credits:	1	Contact Hours:	L-0, T-0,P-2

Course Objectives

The objectives are to study:

1. Fundamentals of Ohm's law, Kirchhoff's current and voltage laws and its practical implementation
2. Measurement of voltage, current, power and impedance of any circuit
3. Analysis of a given circuit depending on types of elements - DC analysis, Transient analysis and Frequency analysis
4. Measurement of frequency and amplitude of any signal using CRO
5. Designing of circuits (at least proto type models) for a given set of specifications weather in time domain or in frequency domain

Course Outcomes

After studying this course the students would gain enough knowledge on:

1. Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws
2. Accurate measurement of voltage, current, power and impedance of any circuit
3. DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements
4. Using DSO to measure the frequency, and amplitude of any signal
5. Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems
6. Teamwork skills for working effectively in groups and develop analytical skills to compare experimental results with theoretical concepts

List of Experiments

1. Introduction to Power supply & Multimeter.
2. To determine the equivalent resistance of a circuit using color code and to verify it using a multimeter
3. To verify Voltage dividing rule and Kirchoff's Voltage Law (KVL)
4. To verify Current dividing rule and Kirchoff's Current Law (KCL)
5. To verify Superposition Theorem
6. To verify Thevenin's Theorem
7. To verify Norton's Theorem
8. To verify Maximum Power Transfer Theorem
9. To verify reciprocity theorem
10. Introduction to CRO & Function Generator
11. To study the transient response of series RC circuits using different values of R and C

Evaluation Scheme

1.	Mid Sem Evaluation	20 Marks
2.	End Sem Evaluation	20 Marks
3.	Attendance	15 Marks
4.	Class response	30 Marks
5.	File	15 Marks
	Total Marks	**100 Marks**

Text Books

1. W.H. Hayt, J. E. Kemerlay & S.M. Durbin, "Engineering Circuit Analysis", Eighth Edition, McGraw Hill, 2012
2. Van Valkenburg, "Network Analysis", Prentice-Hall India, 2001.