Course Name	Circuit Theory and Network Laboratory
Course Code	EE391
Course Credit	2
Contact Hour	3P
Prerequisite	Basic Electrical Engineering (EE101)

Course Objective

The objectives of this course are

1. The ability to conduct testing and experimental procedures on Transient analysis of different electrical circuits with and without initial conditions using Laplace Transform.
2. To give a chance to students to solve two port networks analysis.
3. The capability to analyze the Low and High Pass filter.
4. To prepare the students to have a basic constructional knowledge of Step, Ramp, Impulse, Sinusoidal, Cosinusoidal, Exponential, Gate signals.

Course Outcome

On completion of the course students will be able to

1. Solve the two port network analysis.
2. Select a suitable measuring instrument for a given electrical machine.
3. Conduct experimental investigation and gain knowledge of Filter circuit.
4. Solve the Laplace Transform and Inverse Laplace Transform.
5. Analyze the response of Step, Ramp, Impulse, Sinusoidal, Cosinusoidal, Exponential, and Gate signals.

CO Mapping with departmental POs

H: High, M: Medium, L: Low

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	H			L								
CO 2		L		H								
CO 3		L		H								
CO 4	M			H					L			
CO 5				M								

Course Content

1. Transient response of R-L-C series and parallel circuit: Simulation with MATLAB / Hardware
2. Determination of Impedance (Z) and Admittance (Y) parameter of two port network: Simulation with MATLAB /Hardware.
3. Frequency response of LP and HP filters: Simulation with MATLAB / Hardware.
4. Frequency response of BP and BR filters: Simulation with MATLAB /Hardware.
5. Generation of Periodic, Exponential, Sinusoidal, Damped Sinusoidal, Step, Impulse, Ramp signal using MATLAB in both discrete and Analog form.
6. Determination of Laplace transform and Inverse Laplace transform using MATLAB.
7. Amplitude and Phase spectrum analysis of different signals using MATLAB.
8. Verification of Network theorem using MATLAB.