

National University of Sciences & Technology
College of Electrical & Mechanical Engineering
Department of Electrical Engineering

Subject	:	EE-112, Network Analysis
Prerequisite	:	EE-110, Electric Circuits
Credit Hours	:	3(3:0)
Text Book	:	Fundamentals of Electric Circuits , 1 st Edition, by Sergio Franco, Oxford English Press 1999.
Reference Book	:	Engineering Circuit Analysis , 6 th Edition By Hayt, Kemmerly and Durbin, McGrawHill
Instructor	:	Air Cdre (R) M. Ajmal Jauhar

Course Objective

The course focuses on the analysis and circuit's response of RLC circuits by formulation of the differential equation of the circuit and its solution. The concept of phasors and Laplace transformation are introduced as a tool to solve the circuit equations. The course also covers the frequency response of a circuit through sinusoidal analysis.

Topics

Weeks/Hours

- Natural response of 1st order circuits
- 1st order circuits with dependent sources
- Response of 1st order circuits to constant forcing function
- Response of 1st order circuits to non-constant forcing function
- Complete response of 2nd order circuits
- Laplace transform and inverse Laplace transform
- Solving Circuit differential equations using Laplace transform
- Laplace transform of special signals
- Direct transformation of circuits in to s-domain
- AC steady state power
- Concepts of average power, complex power and power factor
- Frequency response of 1st order circuits
- Asymptotic magnitude and phase Bode plots

Grading Policy

Quizzes	10%
Sessional Exams	40%
Final Exam	50%