

# **Networks Analysis and Synthesis (BEEP-304)**

## **Course Outcomes:**

The students will be able to understand

1. Basic electrical circuits with nodal and mesh analysis.
2. Electrical network theorems.
3. Steady state and transient analysis.
4. Frequency response of current in RLC circuit with sinusoidal ac input.
5. Z and H parameters (dc only) for a network and computation of Y and ABCD parameters.
6. Driving point and transfer functions of a two-port ladder network and verify with theoretical values.

## **List of Programs:**

1. Verification of principle of superposition with dc and ac sources.
2. Verification of Thevenin, Norton and Maximum power transfer theorems in ac circuits.
3. Verification of Tellegen's theorem for two networks of the same topology.
4. Determination of transient response of current in RL and RC circuits with step voltage input.
5. Determination of transient response of current in RLC circuit with step voltage input for under damp, critically damp and over damp cases .
6. Determination of frequency response of current in RLC circuit with sinusoidal ac input.
7. Determination of z and h parameters (dc only) for a network and computation of Y and ABCD parameters.
8. Determination of driving point and transfer functions of a two port ladder network and verify with theoretical values.