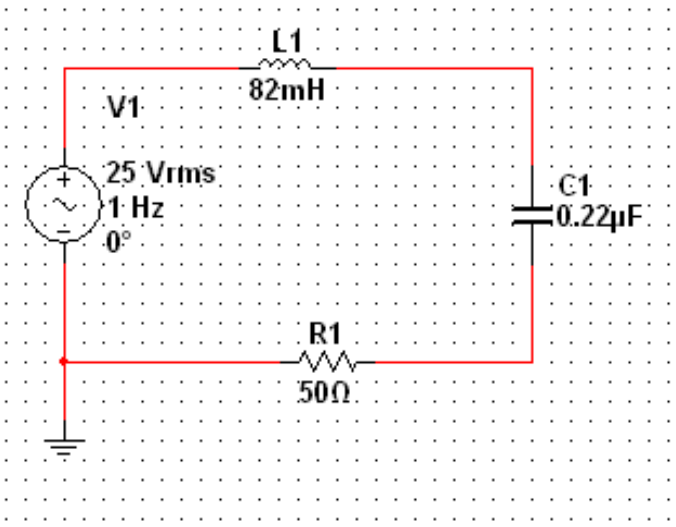
Component Level Laboratory

Analog Circuits Fundamentals

RC circuits frequency response, Multisim workbench

Exercise 1 Measure Frequency Response using Multisim

A. Model the circuit shown below using Multisim



B. Energize the model and use the Multisim oscilloscope to measure the pharos currents and voltages across each element.

a. I_L: _____ b. V_L: _____

c. I_C: _____ d. Vc: _____

e. I_R: _____ f. V_R: _____

C.: Using the Multisim Bode plotter tool, plot the frequency response of the circuit. Find the resonance point of the circuit. Resonance Frequency _____Hz

D. In your lab report, draw a graph of current vs. frequency. Identify the resonance point on the graph

Exercise 2: Frequency Response of the RC filter.

A. Model the one pole RC filter circuit you designed with a break frequency (f_b) of 1 Hz using Multisim.
B. Energize the model and obtain a Bode plot of the frequency response of the filter. Label the break frequency on the plot and include a sketch of the Bode plot in your report.

Report Guideline: Take screenshot of all Multisim schematics.

Post lab Exercise:

A brief conclusion-summary of what you learned in this experiment on RC filters design and their frequency response.