

CE3101 Lab 1: Circuit Analysis and Simulation

Objectives

- Review simple circuit analysis techniques
- Review schematic entry
- Review circuit simulation
- Practice design

Prelab

- Download Multisim from the Software Center
- Download and install the MSOE Title Block Template

student
check off

Assignment

- Do not start the assignment portion of the lab before the lab class. We will walk through the first circuit prior to starting the student portion of the lab.

Part 1: Calculate the expected currents and voltages in Lab1_Circuit_1 by hand and by simulation. Compare the two sets of results.

Part 2: Estimate the expected transient voltages in Lab1_Circuit_2 by hand and by simulation. Compare the two sets of results.

Part 3: Design a circuit similar to Lab_Circuit_2 that uses the same input source (all the same values) but whose:
final voltage is $\frac{2}{3}$ as large as in part 2
DC current is $< 5\text{mA}$
output settles in approximately the same time as part 2.
Be sure to use component values from the Common Component slides.

Check Off

- Document part 1 20%
- Document part 2 30%
- Document part 3 50%

Report (in the box) due by 4:00 pm Wednesday of the week following the lab.