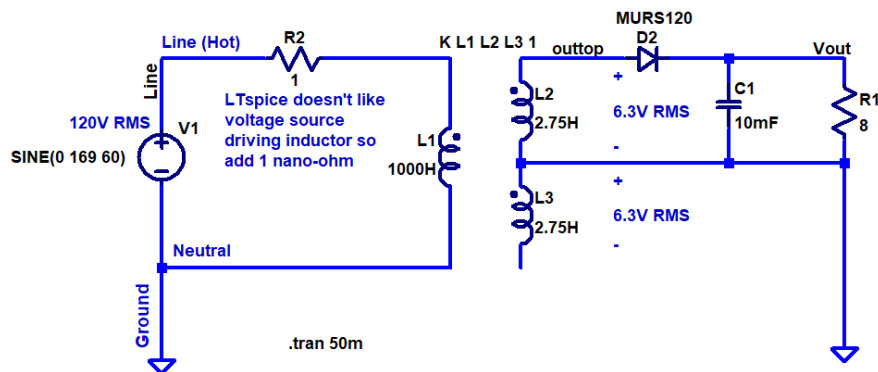


H.W. #2 EE 442/ECG 642 Fall 2022

Show your work for credit and follow the homework [guidelines](#).

- Using LTspice, plot the IV characteristics of the MURS120 (Silicon) and 1N5817 (Schottky) diodes. (2 points)
- Estimate the storage time for the MURS120 (Silicon) and 1N5817 (Schottky) diode. Use LTspice to verify your answers. (2 points)
- What are the RMS values of half- and full-wave rectified signals. (2 points)
- Show that grounding the secondary of the transformer for the examples with simulation problems in Lecture 2 (remove the 10G resistor and ground the output side of the transformer) solves the problem, see below. (1 point)



- Problem 3-17 from the book (the resistor's value is 1 k $\Omega$ ). (3 points)
- In your own words describe the operation of the following circuit. What is this circuit called? (1 point) Derive a symbolic equation relating the droop in the output waveform to the filter capacitor,  $C_{filt}$ , and load,  $R_{load}$ . (3 points) Give an LTspice example that demonstrates that your equation is correct. (1 point)

