ME 120 Experimental Methods

Homework #6: Capacitve Sensor Sensitivity and Simulated Waveform Logger

1. (20 pts) EMfE Problem 8.24. (Hint: apply the definition for "sensitivity" formulated as a derivative and the definition of capacitance. In Part b, the plates slide laterally past each other. It may help to draw a picture for yourself from the top looking down on the plates as they slide past each other.)

2. (20 pts) Implement the functionality of the Waveform Logger experiment using the Waveform Logger Simulator VI, which is available at:

   http://www.engr.sjsu.edu/bjfurman/courses/ME120/WaveformLoggerSimulator.llb

   Include a printout of the Front Panel and Block Diagram. I suggest that you change the background color of the graphs for your Amplitude vs. Time plot and power spectrum plot, so you don't have to waste ink printing them with a black background. To change colors in your graphs, open the Tools palette. Click on the two squares at the bottom of the palette to change the colors. Click on the entities you want to change the color of. To change the color of the plot line, click the paint brush on the plot line shown in the legend.

   If you are using a version of Lab View lower than 8.0, you may need to see me for an alternative VI.