

ENEE 417 Experiments Weeks 1 & 2
Weeks of 01/28/03 and 02/04/03

1. File the forms for using the ENEE 417 laboratory computers if you do not already have permission. Also make sure you have a Glue account.
2. Obtain a breadboard for course circuit constructions.
3. Begin to learn LabView, DAQ, and Magic by running their tutorials.
Since there are only two computers in Room 1330, we will need to shift people on and off of them. Thus, four can use them in two parties of two during the first half of the period and the other four during the other half. Those not on the Room 1330 computers can run Magic tutorials on the Unix computers in Room 1442 or on XWIN in the Jasmine Lab.
4. Path to Magic tutorials: <http://www.ee.umd.edu/newcomb/mslab-vlsi.html>
and then MAGIC Tutorial of Mr. J. Wilinski
5. To learn LabView
 - a) start Exercises.pdf from the icon on the desktop and begin with Exercise 1-1. This will need you to start also from the icon LabVIEW_6.1
Then Open VI, Examples, apps, freqresp.lib, Frequency Response vi
6. After about 1 hour on LabView switch to the data acquisition
Use the National Instruments (Measurement & Automations icon) (say ok to MAX), and then expand (dbl click) Devices and Interfaces. Expand (single click) the PCI-MIO-16E-4 icon. Go to Test Panel on the upper menu bar. Then select Analog Output and channel 1. Put a multimeter on pins 21 (DAC1OUT; see p. 4-2 of PCI E Series User Manual for pin numbers) and 55 (AOGND). Change DC Voltage, Update Channel (lower left of Test Panel) and read the multimeter (which will indicate the voltage that is an output of the DAQ card).
Next close the PCI-MIO-16E4 interface and turn on the two GPIB connected Tektronix scopes and set their addresses to different values (on the scope use utility, options, GBIP setup and address). Under Devices and Interfaces choose GPIB0, instruments shows information about the scopes.
7. After getting used to the DAQ then switch to the Laboratory Projects, starting on p. 251, of the textbook. "Analog Electronics with LabVIEW" (for P1.1 choose two resistors and connect the circuit of p. 252 to the DAQ board; be sure the resistors are large enough that the rated current will not be exceeded).
8. Prepare to make a curve tracer - following Mr. Tan's guide.
9. Begin a search for a base paper for the course. This should come from a refereed journal and have a circuit which can be assembled in the 417 laboratory.