ENEE 417 – Spring 2016
Week #3; starting 02/15/16
Design #1: Op-Amp Curve Tracer

a. If Laboratory Projects for weeks 1 & 2 have not been run, do those first.

No report is needed for weeks 1 & 2 but be sure to have gained working knowledge of the tools, especially LabVIEW, data acquisition, and Spice using transistor models.

b. In this experiment for weeks 3-4 an op-amp curve tracer will be designed, constructed, and tested; use 1458 op-amps and bias them with symmetric + & - voltages of about 15 volts each.

1. Review use curve tracing in PSpice (or Spice).
2. Design an op-amp curve tracer following the circuit shown below. Test this on resistors and diodes. Using LabVIEW as a signal generator for your op-amp curve tracer, obtain 2N3904 transistor curves. Compare with results from Spice.
3. Using the LabVIEW virtual oscilloscope, obtain a copy for your report.
4. Use LabVIEW to computer control the Agilant oscilloscope and record in a file the curves.
5. For the 4007 CMOS transistors, use the DAQ card to acquire transistor curve data and display on a virtual oscilloscope the drain current ID versus VDS curves with VGS as a parameter. Compare with curves obtained via Spice using the equivalent RCA 3600 transistor models.
6. Write a one to three page report summarizing your results (for this op-amp curve tracer).

(as soon as possible) make a parts list from your final choice of circuit and paper and give this to the laboratory technicians; verify that they will be able to obtain the parts needed.)