SMS 491- Sensor project 2 – Due Feb. 27th.

Build (individually or as a group) a sensor of your choice on a breadboard from electrical components that can sense something about the environment. The data will be piped into a computer by using the programmable Arduino board.

Calibrate the sensor against a 'standard' (that is a calibrated sensor or some other known quantity) over a reasonable range of environmentally relevant values. Derive a calibration equation and assess likely uncertainty of sensor (e.g. +/- 2degrees).

Together with the Emmanuel Boss or Jim Loftin test your sensor and assess how well the sensor performed.

Write a short report which includes a picture of your sensor setup, a figure with the calibration data and a calculation of the likely uncertainties in the measurements.

Grading: late submissions,10pts down.

Rubric:

A	Sensor works, calibrated well and performs well in test (A- if minor details missing).
B	Sensor works, calibrated well but fails in test.
C	Sensor works, was not calibrated and fails in test.
D	Sensor seems to respond to the environment but it is not obvious what the sensor is doing.
E	Some components are attached but no output is measurable.
F	No homework turned in.

Addtional resources:
http://misclab.umeoce.maine.edu/boss/classes/SMS_491/Syllabus_SMS491.html