SMS 416- Sensor project 2 – Due Mar. 2nd.

Build (individually or as a group) a sensor of your choice on a breadboard from electrical components that can sense something about the environment or a phenomenon of your interest. The data (digital numbers) 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) based on how well your calibration equation fit tyour observations.

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, a calculation of the likely uncertainties in the measurements and a copy of your program.

Grading: late submissions,10pts down.

Rubric:

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А	Sensor works, calibrated well and performs well in test (A- if minor details missing).
В	Sensor works, calibrated well but fails in test.
С	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.
Е	Some components are attached but no output is measurable.
F	No homework turned in.

Additional resources:

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