

ENGR 1121 Lab 6

Data Logging with an Arduino

March 24, 2014

In this lab, you will gain some experience using the Arduino as a self-contained data logging platform that will allow you to collect data without having to tether your experimental set up to your computer. Unlike the previous labs, this lab will be a team lab. Everyone on your project team should be involved in some way to complete the lab. Each team will submit a single joint report (due one week after the latest lab section represented in your team) describing your experiment and showing your set up and your results.

For this lab, you will revisit one of the measurements that you did earlier this semester (e.g., measure temperature with an LM35 over the course of a couple of days or perform an ECG measurements on someone doing various activities), only this time you will perform it using the Arduino/RWM shield to acquire the data. You will also need to solder together your final sensor interface circuit on the RWM shield rather than construct it on a solderless breadboard. The prototyping area on the shield should have sufficient space for an instrumentation amplifier, a dual or quad op amp, and some resistors and capacitors. Of course, you are free to prototype the circuit in a solderless breadboard before you solder it together, but your final circuit should be soldered together on the shield.

Deliverables/Grading (10 points total)

1. A brief description of your experiment. (3 points)
2. A plot showing your experimental results. (5 points)
3. A photograph of your Arduino/RWM shield. (2 points)