# 380 Team Project Spring 2019

Teams of 3 – 4 students (Ideally a mix of COE's and EE's). Will design an instrumentation package that will be placed in a remote location (outdoors) for up to seven days.

The Instrumentation packet will be designed to sample relevant data to support a hypothesis that will be formulated by the team members.

Data will be collected and stored on a SD card using the Logomatic Serial SD data logger from Sparkfun. Each group will receive a Logomatic.

https://www.sparkfun.com/products/retired/10216

After the experiment has been completed, team members will analyze and present the data that has been collected.

Teams should be mindful of the environmental impact of their instrumentation packet and design it in such a way to cause a minimum impact on its surroundings. In addition safety is essential and the instrumentation packet should be designed with this in mind. Teams should also keep safety in mind when placing the instrumentation in the remote environment, being sure that it is securely mounted in its location.

**Circuit Design:** Every project will include a custom circuit board that will be created, by the individual teams. Teams will use Express PCB to design the boards. You circuit board must meet the specifications given by the PCB manufacture for a "mini board". Circuit boards must be completed and submitted to the Jeff no later than Feb 3rd to insure completion before due date.

**Packaging:** Projects should be enclosed in a weather safe custom enclosure that will be printed on a rapid prototyping machine. Your enclosure should be not be bigger than 5" X 5" X 2". All circuit components and batteries should fit into the enclosure. Sensors can hang off or be mounted on the outside of the enclosure and do not need to fit into the 5"X5"X2" specification. Enclosure designs should be submitted to Jeff for printing no later than Feb 3rd to insure completion before due date.

Due Dates:

1. Team member identification and project manager selection 4/2/2019.

2. Submittal of Gantt chart, and Hypothesis. 4/2/2019.

3. Final Hardware design 4/9/2019.

4. Circuit Board Design, and Enclosure 4/9/2019. (Hard Due Date so Parts Can Be Built and Board Layouts ordered)

5. Final implementation 4/23/2019. (Hard Due Date! Projects will be collect and Place for Data Collection

6. Projects returned to teams for data collection and analysis no later than 4/30/2019.

7. Final Reports, Data Analysis and Presentation 5/7/2019 (8 am Final Slot)