EE/CprE/SE 491 Weekly Status Report 2

Dates: 1/29/18 – 2/2/18

Group #: 5

Project: Micro-Electro-Mechanical Systems (MEMS) Based Sensing System for Soil Conditions Monitoring

Client: Dr. Halil Ceylan

Advisor(s): Shuo Yang and Dr. Yang Zhang

Team Members:

Nathan Coonrod (Report Manager)

Kyle Kehoe (Communications Manager)

Jacob Verheyen (Meeting Facilitator)

David Severson (Web Master)

Sok-Yan Poon (Timeline Manager)

Weekly Summary

We met with Shuo on 1/31/18 for a guided tour of the PCC laboratory in Town Engineering building. This tour gave us more background of previous projects in which paved structures were monitored using multiple sensors. Economic and other factors were emphasized and given a lot of importance

In addition to the tour, we met with Shuo for our bi-weekly meeting and gained a greater idea of what we he was looking for in a final product. He highlighted a few key problems with the current system and how our project would assist his team in the future.

Past Week Accomplishments

- Kyle: Background research on previous project. Toured lab and researched DAQ systems in general.
- Nathan: Research on existing products and acceptable resolution. Laboratory tour and prototype research.
- Jacob: Toured Portland Concrete Lab (PCC), where our client does research. Also researched/brainstormed potential ways to precisely measure resistance and capacitance using an Arduino.
- David: Spent time touring the laboratory that our client uses for research. Learned about the sensors and data acquisition modules that are used in the industry.
- Sok-Yan: Research on using Arduino and document from client. Spent time working on project timeline.

Pending Issues

Need to meet with the sensor developer to learn about technical details. We understand the scope of our project, but do not know what the sensor needs in order to function or on what order the measurements must be taken.

Individual Contributions

Name	Contribution	Hours This Week	Hours Cumulative
Kyle	Research, client/group meetings	3	7
Nathan	Research, client/group meetings	3	6
Jacob	Research, client/group meetings	3	5
David	Research, client/group meetings	4	6
Sok-Yan	Research, client/group meetings, project timeline	4	7

Plan for Coming Week (2/5/18 – 2/9/18)

Begin coming up with solutions for our project. Start providing real material and ideas that could be used for the data acquisition system and design ideas. Program an Arduino microcontroller to take resistance measurements, so it can be implemented with existing MEMS sensors.