

EE/CprE/SE 491 Weekly Status Report 1

Dates: 1/22/18 – 1/26/18

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

The team discussed the overall project at the team meeting held on 1/23/18 in the TLA. Questions, thoughts, and concerns were brought up regarding the MEMS sensors we are supposed to implement into the design of the data acquisition (DAQ) system we are tasked with designing, e.g., temperature and moisture ranges, power sources, applications of the sensors, etc. Team members also spent time reading background documentation provided to us by our advisor Shuo. This background documentation included a two volume report titled *Development of a Wireless MEMS Multifunction Sensor System and Field Demonstration of Embedded Sensors for Monitoring Concrete Pavements* and other supplementary documents

Past Week Accomplishments

- Kyle: Performed background research by reading background documentation aforementioned.
- Nathan: Initial research into existing sensors and available methods to integrate them into a functional prototype.
- Jacob: Researched the sensor by reading over the documentation given to us by our client.

- David: Went through previous documentation provided by our advisor on MEMS specifically. Initial research on using Arduino or the ATMEGA for data collection.
- Sok-Yan: Performed background research using documents provided by client.

Pending Issues

Some clarity issues on sensor operation arose at our weekly team meeting. Team members discussed various thoughts and concerns about the project after reading technical report on the testing of soil/concrete MEMS sensors provided by Shuo.

Individual Contributions

Name	Contribution	Hours This Week	Hours Cumulative
Kyle	Background Research	4	4
Nathan	Background Research	3	3
Jacob	Background Research	2	2
David	Background Research	2	2
Sok-Yan	Background Research	3	3

Plan for Coming Week (1/29/18 – 2/2/18)

Our team plans on attending and touring lab facilities in Town Engineering Building. This tour is being facilitated by our project advisor(s). It is the intent that after this tour, we team members will gain more familiarity with the MEMS sensors we have at our disposal to better approach a design for the DAQ system.

In addition to the tour of the lab facilities in Town Engineering, we team members will compose a list of questions that came up after reading background documentation of the project and ask them at our advisor meeting. This should clarify most of the issues and better define constraints we have to consider on this project.