EE/CprE/SE 491 WEEKLY REPORT 1

Beginning of Semester – 09/19/2024

Group number: SDmay25-04

Project title: Wireless Mesh Network for Pesticide Spray Monitoring and Mapping

Client : Claussen Lab- Iowa State University

Advisor : Nathan Niehart

Team Members:

Ashley Falcon
Drew Scheidler
Hector Perez Prieto
Henry Hingst
Yok Quan Ong
Wesley Smith

We are all trying to gather as much information about the project as possible. No clear assignments, so there are no concrete roles thus far.

- **Weekly Summary**

  This week we met with our advisor. We discussed how we were going to meet with our client (who hadn't reached out to us yet). Professor Neihart suggested that we look into potentiostats, ESP32 Dev boards, and different ways of creating our mesh network. We don't have any kind of specific requirements yet as we haven't met with our client. Professor Neihart reached out after our original meeting to tell us that he had gotten a meeting set up with our client for Wednesday the 17th.

- **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Ashley Falcon	Looking into Potentiostat, ESP32 Microcontroller	3	3
Drew Scheidler	Looking into Raspberry Pi, ESP32 Microcontroller	3	3
Hector Perez Prieto	Looking into Potentiostat, ESP32 Microcontroller	3	3
Henry Hingst	Looking into ESP32 Microcontroller, Mesh Networking modules	3	3
Yok Quan Ong	Looking into Potentiostat, ESP32 Microcontroller	3	3
Wesley Smith	Looking into Potentiostat, ESP32 Microcontroller	3	3

- *o* **Plans for the upcoming week**
  - **Whole Group**: Meet with clients

- *o* **Summary of weekly advisor meeting**

  From meeting with Professor Neihart, Wednesday from 2:15pm to 3:05pm
  - Discussed the main focuses of the project
    - Raspberry Pi (piece receiving data)
    - Microcontroller/writing device (piece writing data)
    - Power system (piece to power the project)
    - Potentiostat (piece to measure the voltage)
  - Professor Neihart instructed us to develop knowledge of these things on the Wikipedia level and to start looking into parts and data sheets regarding microcontrollers (Digikey preferred)
  - Basic timeline
    - Schematic of PCB done by the start of next semester
    - Part number for ESP (microcontroller) picked out and blink test complete
    - Wireless chip set chosen and drivers written by first semester end
    - Next semester start on application code

- *o* **Accomplishments**

1. Organized first meetings with advisor and client
2. Documented advisor meeting (see above)
3. Reviewed basic documentation (schematics, datasheets) and project description
4. Completed in-class activities
    a. Brainstormed questions (Rip the Brief)
    b. Created sketch note of project overview
    c. Documented team contract for weeks to come