

Spring 2023 ECE 445 Team Contract

Project No. and Name	Project #39: Soil Moisture Controller
Member Name, netID	Ren Yi Ooi, rooi2
Member Name, netID	Isabel Alviar, ialviar2
Member Name, netID	First Yingyord, phuriy2

Project Description

Our project involves designing and creating a soil moisture controller that can stabilize the moisture level within each pot at a specified percentage set by the user. In addition, the system is also capable of logging the moisture readings and visualizing those data to the user.

Project Goals

The goals of this project are as follows:

- The moisture sensors should be able to detect the current level of moisture in the soil to an accuracy of $\pm 5\%$ for the moisture level data to be logged on an SD card and displayed on an LED bar graph on an hourly basis
- The system should be able to provide irrigation when the moisture level falls beyond a set threshold level as inputted using a keypad by the user and maintain it to an accuracy of $\pm 5\%$
- The system should be scalable to four different pots and the moisture level maintained at 100%, 75%, 50% and 25% in each of the respective pots

Project Meeting Times

We will have a weekly meeting with our TA on Tuesday from 4:00-4:20 PM, and Friday from 5:00-5:20 PM. We will also have a weekly meeting with the ABE Capstone Project Team and USDA representative on Monday from 12:00-12:30 PM.

Expectations for each member

1. Every team member is expected to give weekly updates on the progress they have made.
2. Every team member is expected to be present at every weekly meeting with the TA and the ABE Capstone Project Team.
3. If any member has scheduling conflicts with the weekly meeting, they are expected to mention the conflicts to the other team members at least 24 hours before the meeting.
4. Every team member is expected to keep track of their progress as indicated in the schedule section of the Design Document.
5. Every team member must be open to feedback from other team members, or the TA.
6. If any member's progress is behind the agreed schedule, a meeting must be scheduled immediately to discuss the potential reasons and solutions.
7. If any member faces an unexpected problem in their parts, they must communicate with the other team members about the issues.
8. Every team member is expected to take notes or observations they find useful to the project into their individual lab notebook.

Roles

The responsibilities of each team member are distributed evenly by the subsystem as follows:

- Ren Yi will work on power supply and user interface subsystem
- Isabel will work on data logging and irrigation subsystem
- First will work on controller subsystem and PCB design

After each subsystem is properly tested, every member will work together in assembling the physical components, testing the prototype, and designing the demonstration.

Agenda

As a team, we created an agenda with tasks that should be accomplished every week, either individually or together. The schedule can be found in our Design Document. Each team member is responsible for completing their tasks on time, detailing notes in their own lab notebook, and updating the other members frequently. If any questions, concerns, or ideas arise, a group member should communicate them in the groupchat or in-person so the other members can help out and the project remains on track. It is expected that everyone will respond within 24 hours of a message being sent. When a decision needs to be made, it must be approved by a consensus. No specific team member is appointed to keep records, but at least one member should write notes during a meeting and all files should be placed in our shared Google Drive folder with the ABE team.

Process and penalties for dealing with team issues

We will resolve the issues through effective communication with each other in making sure that there are no misunderstandings and that we are always on the same page. If the situation escalates, we will talk to the TA in trying to resolve the issue and will not jump to any judgment. Each and every member should be given an opportunity to share their perspective of the issue and be given the benefit of the doubt. With such a process, our team is confident we are able to resolve any problems that might arise during the project.

End-of-term agreement on using final peer assessment for grade adjustment

This contract would provide some form of guideline on how to manage the project throughout the course of this semester. It would keep us accountable and ensure that we keep to the content that we have set out in this contract. The two formal peer assessments will serve to make a check on whether we have contributed sufficiently according to the guidelines per this contract, and this will be reflected in the respective grades that we receive.

Signatures

I affirm that I participated in generating this team charter and that I will abide by its contents to the best of my ability. Furthermore, I understand that failure to meet the expectations expressed here can lead to the stated consequences.

netID: ____rooi2____ (digital) Signature: ____Ren Yi Ooi____ Date: 22 February 2023

netID: ____ialviar2____ (digital) Signature: ____Isabel Alviar____ Date: 22 February 2023

netID: ____phuriy2____ (digital) Signature: ____First Yingyord____ Date: 22 February 2023