

Project Team Charter

ME476C: Capstone I

Signature Cover Page

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

Print Name: Ian Tarp

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I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

6/5/25

Print Name: Chenxi Dong

Signature: Chenxi Dong

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

6/5/25

Print Name: Rowan McVillough

Signature: Rowan McVillough

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

6/5/25

Print Name: Shu-Long Wang

Signature: Shu-Long Wang

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Purpose-

This team was formed to create a functional weather station for use in the Renewable Energy lab at NAU. Each team member has different reasons for joining this project. Ian joined to work in the field of renewable energy and help create something that can last into the future of NAU. Rowan joined because of his interest in weather data collection as well as contributing to NAU that may be used by future students. Chenxi wanted to expand his knowledge in this area of engineering while making contributions to meteorological detection. Shutong is interested in the application of IoT, renewable energy, and hopes to enhance his practical skills while participating in meaningful environmental technology development.

The current stakeholders are our client Professor Pete, as well as the Renewable Energy Lab where we will be constructing this weather station. The expectations our stakeholders have for us are to work successfully as a team to create a functioning, long-lasting weather station for the Renewable Energy Lab. This weather station must collect multiple types of weather data and store it in a way that is accessible anywhere. This data storage is also expected to be long term. The team is expected to familiarize themselves with microcontrollers like Raspberry Pi's and must be capable of calibrating the various weather sensors.

Goals-

As a Team, our goal is to create a professional level project which we may use on resumes in the future to help secure a job. To achieve this, we are aiming to receive an A grade for this course. We want this weather station to stay in the RE lab for multiple years for students and researchers to utilize. This weather station should be capable of storing its data for at least 4 years. The data must be presented in an organized and simple manner. We plan to document the sensor calibration so that future users may recalibrate easily when needed and so that any maintenance that must be performed can refer to each previous step. Our collected data must be accurate enough to be utilized in research. We will be using other weather stations in the area as benchmarks to help achieve this.

The database website will be well organized and easily navigated. It will also be both desktop and phone compatible so that it may truly be accessed from anywhere. Our goal for the overall project is to remain ahead of schedule on our due dates so that our fall semester may go as smoothly as possible. We plan to maintain good communication, which will include discussing scheduling issues or other problems in a timely manner. Each team member is expected to contribute equally. This contribution will be measured as the 9 hours of work each week. This will be further outlined later in this document. Our

final goal for this project is to have all major documents and the website available in both the native languages spoken by the group.

Team Member Roles & Responsibilities-

Role	Name	MBTI	Tech Roles*
ME	Shutong Wang	ISFJ	Leads the physical build process, ensures the design can be made, oversees part fabrication, and website design.
CE	Chenxi Dong	ESFP	Develops CAD models, ensures design accuracy with the prototype
PM, LM	Ian Torp	ENTP-T	Head of communication, calibration of sensors, and website design.
TE, FM	Rowan McCullough	ENTP-A	Calibration of sensors, testing accuracy and data collection, updating Bill of Materials.

**Technical roles will be further expanded on as the client meeting is conducted and as the project unfolds*

Ground Rules-

Meetings are scheduled for Mondays and Thursdays at 1 PM, preferably held in person. However, virtual attendance via Teams is an option if a member cannot attend physically. If a member must miss an in-person meeting, they are expected to call in if possible. Missing a meeting entirely requires 24-hour notice, while switching to virtual attendance requires 1-2-hour notice. During meetings, each discussion topic must be addressed by all team members before moving on to the next topic. Decisions will be

made by vote after a prior discussion outlining the implications of each choice. In case of a tie, smaller teams will form to deliberate further and reach a compromise.

If a team member has a dissenting opinion, they will be given the floor to present their perspective. A discussion will follow to see if any opinions have shifted, and if disagreement remains—even from just one person—the group will continue working toward a compromise. A portion of each meeting will be devoted to sharing updates on recently completed tasks. Throughout the week, the Project Manager will check in to ensure progress is being made on assignments. The Project Manager will also be held accountable by all other team members, ensuring mutual responsibility within the group.

A three-strike system will be used before involving Professor Pete. Strikes will be issued for missing a meeting without prior notice (excluding emergencies), missing deadlines, or for any action the team deems strike-worthy through a group vote. Each team member is expected to contribute an average of 9 hours of work per week. Falling short by 1–2 hours in a given week is acceptable if the time is made up by the end of the semester. Ultimately, each member is responsible for maintaining a weekly average that meets the 9-hour expectations.

Potential Barrier & Coping Strategies-

The language barrier will be the first challenge we anticipate. To address this, both parties will use a live translation app to assist with communication. Additionally, grammar checks will be conducted before submitting any assignment to ensure clarity and comprehension. Each document will be made available in both languages to the best of our ability, ensuring inclusivity and mutual understanding.

Another potential obstacle is budget limitations. This issue will be managed through a combination of client support and group-led fundraising efforts. Fundraising responsibilities will be shared among group members, and we hope the client can offer guidance regarding local businesses or beneficiaries that might be willing to contribute. Scheduling conflicts may also arise due to some group members being enrolled in multiple summer courses or having employment obligations. While this might occasionally prevent reaching the 9-hour weekly threshold, it is acceptable as long as those hours are fulfilled later. To handle scheduling conflicts such as jobs or vacations, rescheduling or virtual meetings will be utilized. Any proposed changes to meeting times must be submitted with at least 24 hours' notice and will be subject to a group vote.

Lastly, our group has experienced issues with procrastination and accountability in the past. We have agreed that while individual procrastination is permissible, all work must still be completed by the deadline listed on the Gantt chart or by the time agreed upon by the team. Another issue encountered previously was group members taking credit for work they did not do. Although we do not expect this to occur, if it does, it will be addressed through peer reviews and marked as a strike. Peer reviews will serve as strict and honest

assessments of each member's contributions, ensuring accountability throughout the project.