

Spring 2023 ECE 445 Team Contract

Instructions: The content of this document should be specific to your goals and needs. Ideas for the content of each section are provided as suggestions.

Project No. and Name	
Member Name, netID	Aishee Mondal, aisheem2
Member Name, netID	Chayanid Kaewla, ckaewla2
Member Name, netID	Sanjana Pingali, pingali4

ECE 445 is a project-based course. The course includes both team and individual grades. Project teammates generally all get the same grade for team assignments based on the expectation that all team members do their fair share of the work involved. The purpose of this contract is to lay out the tasks needed for the successful completion of the project and distribute them in a fair and efficient way to the team members. It will also discuss how the teammates will work together during the project and address any issues that come up. A contract that promotes good teamwork that leads to a successful project should:

- Acknowledge that each team member has commitments and responsibilities outside of ECE 445
- Encourage open communication about challenges that team members are facing, both in and out of ECE 445
- Give team members the benefit of the doubt and the opportunity to explain themselves when something goes wrong and resist jumping to judgement

Project Description: *Short description of project*

Our project is a health tracking system device that keeps track of various health data such as heart rate, temperature, blood oxygen levels, and as well as an emergency-like fall detection used in elderly homes. In addition, if the elderly person is lost, we would have GPS tracking enabled to figure out their location and assist them as needed. Our connecting web application would allow the elderly home caretakers to monitor multiple elderly people at once, as well as track individual health irregularities and communicate them to the doctors. A notification would be sent on the app when an irregular critical heart rate or breathing activity for a particular person is observed, and an alarm on the person would be triggered. The alarm will also be triggered when a fall is detected. We could also store past health data points in a database and monitor for any irregularities, or doctors can use this during checkups.

Project Goals: *If the team is successful in its purpose, what hardware and software achievements will attest to this?*

The hardware would be able to accurately measure health data and transmit these data through different protocols, like I2C and UART, to our microcontroller module. Reading these signals off of the respective input pins from the microcontroller module and accurately interpreting them in terms of BPM (Heart Rate), degree Celcius (Temperature), and percentage (Blood Oxygen Level) will indicate hardware achievement. In addition, the beeper emitting sound based on a digital signal from our microcontroller module when an irregularity is detected in vitals is also an indication of success.

A successful software would be able to store the health data on the database and display close to real-time health data on our web application. It would also be able to store and display data for multiple people and see the respective health information for each person on our web application.

Expectations (ground rules) for each member: *Try to list six or more minimum expectations. Consider aspects such as preparation, participation, feedback, responsiveness, etc. Try to explicitly list anything that could potentially turn into a problem. Find ways to encourage everyone to communicate (this may also fall under “tasks”).*

Preparation

- We expect that all members should be aware of which stage of the project we are in and to be sufficiently prepared for any part they are working on, including background theory, software usage, etc.
- We also expect all members to be prepared with sufficient progress on the parts they are working on when we decide to meet to integrate different parts of the project.

Participation

- We expect all of us to participate in group discussions, sharing our honest thoughts and ideas to eliminate potential problems together.
- We expect all team members to work on their assigned part and to contribute fairly to any part that requires all members' contribution.

Feedback

- We expect that all team members are open to receiving constructive feedback as well as reconsidering design decisions over iterations resulting from the feedback.

Responsiveness

- We expect all of us to be communicative on the group chat and to be responsive within a reasonable amount of time.
- We also wish to have a sufficient discussion in order to reach a consensus on a design decision and expect concrete opinions and responses.

Roles: *Do you see this team performing well because everyone works together and contributes equally? Are there certain aspects of the project that some teammates excel at? Can tasks be spread among individuals to optimize progress toward the final product?*

We are planning on splitting up the sensors and how they integrate into the microcontroller. Each person will be responsible for the circuit schematic and functionality of their sensors. We are using temperature sensors, heart rate sensors, oximeters, accelerometers, and GPS. These sensors will be worked on individually by the person assigned to them.

We also plan on splitting up the software aspect of the project. After the sensor data is sent over to the database over the wifi module, which we will work on together, we will divide up the backend and front end for our web application. Everyone in our team is very comfortable with web application software and database handling, so we will have one person each responsible for database formatting, the frontend interface, and the backend API.

I think this team would perform well because everyone is very comfortable with working with each other and contributes to multiple aspects of the project. We are also very open to learning and developing skills even if we do not have sufficient experience on the task, and we are comfortable with picking up new skills as we go.

Project Meeting Time(s): *The team will meet at the scheduled team meeting with TA each week. Can you also preset an ideal time for team meetings in the lab (your team may need to sign up for lab bench access)? Is your team interested in meeting to work on other aspects of the course together such as project research?*

We plan to meet regularly on Tuesday (2-6 pm), Wednesday afternoon (2 - 5 pm), and Thursday (1-6 pm) as we all are mostly free on those days (this would be an ideal time for the team meetings in the lab and for working at the lab bench). We would schedule an additional meeting if needed or reduce the meeting duration, depending on the stage of the project. We usually do project research together, i.e., researching different parts required, ensuring that the parts comply with requirements and fulfill the purpose, etc.

Agenda: *Who will set the agenda? Beyond the weekly meetings with the TA, what will the team do to ensure that it stays on track during the semester? When a decision needs to be made, will it be approved by consensus or majority vote? Will a team member be appointed to keep records?*

We plan to work collaboratively on all our decisions, and all of us set the agenda. We would consider the benefits and drawbacks of each decision and make sure we all are in agreement before we commit to a conclusion. We would also do sufficient research on the differing opinions in order to ensure we consider all aspects and reach the best decision possible. In addition to the weekly TA meetings, we have a Google Drive with planning and schedule documentation to ensure we are on track during the semester.

Our team member Aishee Mondal is keeping track of our records to ensure we store all the information in an organized way.

Process and penalties for dealing with team issues: What happens when ground rules are broken? Who intervenes? What happens if the situation escalates? Always remember not to jump to judgment. Give group members the benefit of the doubt and the opportunity to explain themselves when something first goes wrong. TAs and instructors are available to help resolve issues.

If a problem arises, we plan to be honest and reasonably talk about it together first without jumping to judgment. If we cannot solve the problem among ourselves after a group discussion, we will bring the situation to our team TA's attention, and if the situation escalates, we will then talk to the professor.

End-of-term agreement on using final peer assessment for grade adjustment: Do you believe that this contract should hold your team accountable to its contents or that it may hold little value? There will be two formal peer assessments this semester. The first is used only to provide honest, constructive feedback to each team member. The second peer assessment affects a teammate's grade. Without accountability, many promises go by the wayside.

We plan to follow this contract and use it as a guideline if we encounter any teamwork issues. This contract will hold our team accountable for its contents and will be used in order to form expectations and provide honest feedback to each team member.

Signatures: Iterate on this document until everyone is comfortable with its contents and signs (it is okay to type your printed name as your digital signature).

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: aisheem2	(digital) Signature: Aishee Mondal	Date: 02/15/23
netID: ckaewla2	(digital) Signature: Jeep Kaewla	Date: 02/15/23
netID: pingali4	(digital) Signature: Sanjana Pingali	Date: 02/15/23