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	**Team 15 – Smart Helmet With Light Indicators for Brakes and Turns**
Member Name, netID	William Salazar, wds3
Member Name, netID	Sanjivani Sharma, sharma74
Member Name, netID	Jasmehar Kochhar, kochhar4

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:

To make riding a motorcycle safer by increasing the visibility of riders, we plan to develop a "smart" motorcycle helmet. The helmet will mimic the motorcycle by having turn signals and a brake light, following the illumination of the lights on the motorcycle. The motorcycle and helmet will communicate via Bluetooth.

Project Goals:

1. When the motorcycle's right turn signal illuminates and blinks, the helmet's right LED should illuminate and blink. The same relationship should apply to the left LED.
2. When the motorcycle applies its brakes and its brake lights illuminate, the helmet's brake light should illuminate. When the brakes are released, the LED should turn off.
3. When the turn signal is turned off, the LED turn signals on the helmet should turn off. When the brake is not activated, the brake LED should turn off.

4. Latency for the helmet LED lighting up, especially the brake, should be very low, ideally as low as possible to communicate in real time precisely the moment when brakes have been applied.
5. The safety measures and pre-existing performance of the motorcycle are not compromised while executing the project or upon completion.

Expectations (ground rules) for each member:

1. Show respect towards all group members. This can be done by using appropriate language, offering positive and supportive feedback, and listening thoughtfully.
2. All group members must respond to communication from other group members within 24 hours.
3. No group member will put sole blame on another group member. The group will work to address processes, not individuals.
4. All group members will show up on time to meetings. If a group member is going to be late, this must be communicated in advance.
5. All group members are expected to contribute positively to group meetings. This can be done by offering feedback on designs, sharing personal work, or by generating new ideas.
6. All group members will come to meetings with the required documents.
7. Every group member's idea will be taken into consideration.

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 believe that we all have a very even distribution of skill sets, and it might be restrictive for us and our learning outcomes from this class to pigeonhole members into purely software/purely hardware-related tasks. However, there are certain things that some members are stronger at, such as Will having a solid background in hardware projects, and Jasmehar and Sanjivani being comfortable with each other's software skills due to being teammates in CS 225. Such differences will see one member taking the lead in designing and setting the agenda, while others will actively provide support.

In the interest of efficiency, we will create an efficient and timely schedule and devote our energy to achieving every milestone as it comes together as a team.

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?*

Team meetings will take place either on Tuesday, Wednesday, or Thursday evenings. These meetings will be collaborative in nature, allowing team group members to exchange ideas & feedback and contribute to project documents.

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?*

Will has volunteered to be the scribe, so he will maintain records and set the agenda. Decisions will ideally be made by consensus, but if there's a difference of opinions on technical matters, we will work with the course staff to resolve them until we reach consensus. However, if there are differences in non-technical issues, we will go with the majority vote.

To ensure that we as a team stay on track, we will create weekly agendas and touch base with the TA. We will also ensure we meet at least 2 times per week. Lab notebooks will be diligently maintained by team members to keep track of their individual progress.

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 judgement. 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.

When a ground rule is broken, the group will set a meeting time to discuss the infraction and offer solutions on how to move forward positively. If the group is not able to resolve the issue, the group will contact the assigned TA to intervene as a mediator.

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 all agree that the team contract is our foundation for ground rules and cooperation, so we should be held accountable by it. All of us want to succeed in this course not just for a good grade, but also for the satisfaction of completing an endeavor which is essentially the culmination of most of our undergraduate ECE education. So, we take both this course and this contract very seriously.

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: wds3	(digital) Signature: William Salazar	Date: 2/2/24
netID: sharma74	(digital) Signature: Sanjivani Sharma	Date: 2/2/24
netID: kochhar4	(digital) Signature: Jasmehar Kochhar	Date: 2/2/24