Spring 2026 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	Group 37 - Ant-Weight BattleBot - DC Hammer
Member Name, netID	Carson Sprague, cs104
Member Name, netID	Ian Purkis, ipurkis2
Member Name, netID	Gage Gathman, gagemg2

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 battle bot that will compete in the end-of-year ECE445 battle bot competition. Our main attack tool will be a motor-powered sensor-enabled hammer and wedge attachment allowing for multiple methods of opponent submission. We will also support inversion adjustment; an important defense mechanism should the bot get flipped upside down. A Bluetooth keyboard will be used to control the bot. This combination of offense and defense should hopefully give us a good shot at going for in the competition.

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

We deem this project successful if our bot:

- can be controlled by a Bluetooth keyboard (Bluetooth handler and control system)
- has a functioning hammer/wedge attachment that can be activated either automatically or by user input
- can still function even if it gets inverted (and have control system adjust automatically)
- last the entire battle period without running out of power
- hopefully win the competition!

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").*

1. Consistent Communication
   a. We intend to divide the work substantially, with each team member taking ownership/responsibility of different design elements; thus, consistent and constant communication will be necessary for updating the team as well as assigning new tasks.
2. Timely Completion of Assigned Tasks
   a. With the division of work for this project, it's on individual team members to complete their assigned tasks on time or communicate issues when they arise to keep the development of the bot on schedule. With our overlapping backgrounds, we can shift around responsibilities to aid any task falling behind and maintain our development timeline.
3. Attendance at Team Meetings
   a. Attendance at team meetings is necessary for clearer communication. With the complexities of some parts of the project/design we want to make sure that nothing is "lost in translation" over text or other online chats. Additionally, meetings will give each member significant opportunity to get help on their tasks.
4. Preparation for Team Meetings
   a. We plan on scheduling two consistent meeting times per week at minimum. Assuming other miscellaneous meetings are somewhat limited in frequency, it is essential that team members come to meetings prepared to share, discuss, and collaborate. Additionally, coming to meetings prepared with some kind og tangible progress will help keep us on track as the semester continues.

5. Openness toward input/comment from teammates
   a. Our project requires diverse skillsets and some significant independent work with the division of work. We want to make sure that at the end of the semester the project is OUR project, meaning that everyone contributes meaningfully to the whole of the final product. Thus we want to make sure that each member's voice is heard, even

concerning elements that are not necessarily assigned to that member, so open constructive criticism and input is essential for making sure that the team's vision is ultimately the final result.

6. Respect for other teammates' time
   a. This requirement is somewhat of an umbrella requirement. We will all have to commit many hours to the completion of this project and we want to make sure that each team member is utilizing their time effectively. For this, we need to make sure that each member is respectful of the other members' time: i.e. not cancelling meetings last minute, getting important tasks done on time, etc.

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?*

The team has a variety of backgrounds that pair well together. Gage specifically is an EE student, and has experience with soldering, electronics, and 3d printing. Ian is a CE student, and has experience with 3d printing, software engineering, and has designed competition battle bots in the past. Carson is also a CE student and has embedded experience, and a little bit of CAD experience.

Since all of us have different backgrounds, we plan on dividing the work to play to each other's strengths. Gage will focus more on the electrical/power subsystem and PCB design (with the support of the team). Carson will focus more on the software on the bot, namely getting Bluetooth to work and the control system. Ian will help with the software, PCB, and battle bot design.

We intend on splitting up the work so that each member works on something to which they are proficient. This will ensure that quality work is being done. However, we do expect a lot of collaboration. For instance, Carson and Ian, being CE majors, have limited experience with PCB design, but will help Gage with KiCAD design and soldering of the PCB. A priority of ours throughout this project is learning together, as well as teaching each other.

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 meet with our TA on Wednesday evenings. We have also allocated time on Tuesday and Thursday afternoons (3-5pm) to meet for miscellaneous reasons, such as giving updates, getting feedback, designing, brainstorming, lab work etc.

We do not plan on meeting together to work on project research.

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 will reach a consensus on the agenda before having a meeting. The way we've had it thus far is that someone says, "Can we meet today and work on X", and it's worked well. We will operate mostly on consensus when making design decisions as well but will obviously consider who is more knowledgeable on the subject matter at hand. As far as staying on track, during our meetings and during general communication we will set deadlines for when tasks should be completed. All team members are expected and responsible for keeping records during and outside of meetings (lab notebook). All relevant documents should be shared in a space which can be accessed by all team members, and show the relevant timeline of changes to that point.

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.

If ground rules are broken, we will address the situation within our group first and approach the situation with grace. We understand life happens and are willing to be dynamic in our responsibilities to make sure the project continues. If the situation escalates beyond that (one person literally doing nothing), we will go to our TA and escalate beyond that if necessary. We have worked well together thus far and don't expect any issues.

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 believe that this contract is important, but we also understand that life happens and situations may arise in which one person might need to pick up some slack one week, while another picks up the slack the following week. If a situation truly does arise in which one person is doing little to nothing, we will address it early within the group, and potentially with our TA. Given how we have worked together thus far, we find it unlikely that we will run into any issues.

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: cs104   (digital) Signature: Carson Sprague   Date: 2/19/26

netID: ipurkis2   (digital) Signature: Ian Purkis   Date: 2/19/26

netID: gagemg2   (digital) Signature: Gage Gathman   Date: 2/19/26