

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	74. Isolated Voltage Sensor
Member Name, netID	Jevin Liu, jevinl2
Member Name, netID	Laureano Salcines, ls38
Member Name, netID	

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:

The Isolated Voltage Sensor project is a sensor that safely and digitally measures the voltage of extreme high-power systems. To protect digital output devices, the sensor has to be galvanically separated – i.e. isolated – from the voltage to protect them from excessive current flows.

Project Goals:

- Voltage: The isolated voltage sensor should be able to measure voltages up to ± 100 volts, with a tolerance of 100 millivolts
- Impedance: To not affect the power circuits that much, impedance should at least be 10 megaohms
- Sampling Rate: To provide an accurate measurement at any particular time, the sensor needs to sample at at least 10 kilosamples per second

Expectations (ground rules) for each member:

- The team members should meet once a week other than the TA meeting
- The team members should meet pre-existing deadlines and set project milestones at their discretion
- The team members should share the workload whenever possible

Roles:

There appears to be two different sides to the project

- Coding the I2C, SPI, and UART protocols, probably through the Arduino microcontroller (Laureano)
- Soldering and PCB design, connecting the components with the physical board (Jevin)

However, since neither of us are that well-experienced in either category, these categories should be subject to change depending on our experiences in the project. In addition, team members are likely to cross over if needed.

Agenda:

As a team, with our consent, both of us will decide on the timing of our agenda so we can meet set deadlines. To stay on track every week we will decide on a meeting date, taking account of the class calendar. More generally, we will make project decisions by consensus.

Process and penalties for dealing with team issues:

We hope that this will not be an issue but if there is a violation the best idea is to have a TA to talk to and see how we can solve it.

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

The contract is a key factor to refer to in case things go badly and a reference when we need to improve our team effort. It should be flexible, however it also should hold both parties to account. This document is the base for us to work well as a team.

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: Ls 38 (digital) Signature: Laureano Salcines Date: 25/02/2023

netID: jevinl2 (digital) Signature: Jevin Liu Date: Feb 25, 2023