THE UNIVERSITY OF VERMONT
COLLEGE OF ENGINEERING &
MATHEMATICAL SCIENCES

The University of Vermont
Introduction to Electrical Engineering Design

Design Challenge II: Grocery Store Door

General instructions:
Create a circuit that turns a stepper motor a set amount of steps (opening the door) in response to a distance sensor reading ”close” values. Make this circuit as close to a real automatic door as possible. The door should close after the person has passed, but reopen or remain open if another person arrives.

Form groups of 2 and work together **but do the write up individually**.

Ask TAs for help adding extra stuff like buzzers, speaker, leds ...

Things to consider:

- Start slow! Make sure the easy stuff works first.
- Pseudo-code can be helpful for difficult problems like reopening the door.

Writeup:

- Describe your product in English. What is it? What is significant about it?
- Make a diagram of your circuit! (LTSpice, along with plenty of online resources will help you with this)
- List and expand on the steps you took to converge to a solution.
- Name difficulties you faced and explain how you overcame them.
- Describe a significant design decision or feature in your design.
- Explain the impact this decision or feature has on people, profits, and/or the planet.
- Name a design decision or feature you would choose to do differently in retrospect and explain why.

FOLLOW THE TEMPLATE!!!
It should be attached to the lab module.