

# Intro to Embedded System Design Fall 2018

## “Blind Leading the Blind”

### Term Project Proposal Guidelines

#### Project Guidelines

##### *Requirements:*

- Navigate from Makerspace event space to cafeteria while blindfolded
- Develop electronic/embedded system that will help to complete the above task
- Buy pizza slice in the cafeteria

##### *Restrictions:*

- The person has to be blindfolded the whole time, no visual feedback allowed
- Teammates are not allowed to help the person to navigate
- One of the TAs will accompany the contender
- \$50 budget per team (explained below)
- The contenders will get special TShirts that they will have to wear
- No direct tactile feedback (for example, you can use a stick or whatever but cannot FEEL with stick, place sensor on it etc is fine)

##### *Grading Criteria:*

- Ability to successfully navigate from start to finish point (30%)
- Creativity (20%)
- Well written code (20%)
- Presentability (10%)
- System robustness (20%)
- Peer review

##### *Every group will be given the following items:*

3x HC-SR04 Ultrasonic Sensors  
1x GP2Y0A21YK0F IR Sensors  
1x stackable proto shield  
5x Screw Terminal Blocks

On top of that every team is allowed \$50 budget for additional items that your design requires. You may use items in the Arduino kit, that will not count towards your budget. Anything else you **use** will count towards the budget, for example raspberry pi or camera, etc, whether it is purchased or not.

## Proposal Guidelines

Include your group number. One submission per team. In the proposal you are to describe your approach and strategy. Do not write an essay, one paragraph of text supported by diagrams and charts is more useful. Please be neat and concise. You are welcome to use state machines, flow charts, tables, etc. You are required to include bill of materials (BOM) in the proposal. Include total price in the BOM. The BOM should have the following format:

Item	Part Number	Quantity	Price	Purchasing Link
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## Proposal Due Date

Thursday, November13, 12:00 PM  
Submit PDF!