

Criteria:

The Security System project must meet the following criteria:

1. The project is to be worked on outside of class except for required presentations.
2. UCA PD officer Durwin Lasker (dlasker@uca.edu) may offer insights and nontechnical evaluation / suggestions. Refer to supplemental materials for further general details regarding the prototype device.
3. The prototype device must be portable (ie not mounted to the wall) and run off of battery and/or wall outlet power. The device must also utilize several sensors to alert the user of breaking and entry through windows or door via an audio alarm as well as a text message or blinking/flashing bright lights etc.
4. The prototype should use a LCD or other screen to give status updates to the user. Buttons or a keypad input can be used to arm/disarm or enter information to the system. The prototype should be compact.
5. The budget for the project cannot exceed \$100.
6. Cool Points Bonus: a touch sensitive screen could be used in place of the buttons/keypad.

Timeline:

The following time line illustrates the reporting due dates for the project.

- March 14 - 18: Research supplemental materials for project, as well as other similar projects or commercially available units. Contact your nontechnical project mentor for input.
- March 21 - 25: Spring Break (no class) but be thinking about the project.
- March 28 - April 1: 5-min summary of project ideas and preliminary budget ($\leq \$100$) at start of class on Thursday, March 31st. The budget should follow the format as shown below. Be mindful of shipping delays etc. Update your project mentor with progress to date. Seek additional input if needed.
- April 4 - 8: 5-min summary of project to-date at start of class on Thursday, April 7th. Update your project mentor with progress to date. Seek additional input if needed.
- April 11 - 15: 5-min summary of project to-date & 3-page summary of project with plan for competition at start of class on Thursday, April 14th. Update your project mentor with progress to date. Seek additional input if needed.
- April 18 - 22: 5-min summary of project to-date at start of class on Thursday, April 21st. Update your project mentor with progress to date. Seek additional input if needed.
- April 25 - 29: 5-min summary of project to-date at start of class on Thursday, April 28th. Update your project mentor with progress to date. Seek additional input if needed.

- May 2 - 6: Final presentation and report due. Presentation is 15-min with 5 min for Q& A during the final exam period for Microcontrollers (Thursday, May 5th at 8AM in CCCS 112). The report follows the template we have been using and is due when you give your presentation. The report should be at least 10 pages not including code, photos, or figures.

Budget:

The budget is limited to \leq \$100. Your budget request should follow the format below in a Google spreadsheet that can be shared with Dr. Frederickson and I.

Name	Description	\$ per pkg	Comments	# of pkgs	Total Cost	Supplier	Link to order
Drive wheels	103 mm dia rubber	\$22.99	pkg contains 4 wheels	1	\$22.99	Amazon	https://www.amazon.com/link.to.item
Front wheels	100mm diam omni-wheel	\$9.99	pkg contains 1 wheel	4	\$39.96	Servo City	https://www.servocity.com/link.to.buy
etc	etc	etc	etc	etc	etc	etc	etc