

ELEC 390/49X Project Outline

Section 1) This section is to be filled by the students:

Project title: Arcade Machine Development

Group #:16

Group members:

1-Cooper Harasyn

2-Allison Christensen

3-Jacob Denyes

4-Tom Heysel

1. Problem hypothesis

Following the principles of lean development discussed in lecture, working in a playful environment impacts the brain positively by increasing motivation, driving efficiency, improving memory, and even enhancing feelings of empathy among peers. While the foosball tables in the Bain lab are loved by so many, they fail to showcase what technologically can be accomplished by our ECE Department.

2. Solution hypothesis

The goal of this project is to build an arcade game, complete with a full game cabinet, and running on a Raspberry Pi. This product is targeted towards common spaces such as the Bain Lab to drive creativity, empower optimization, and to showcase the skills we have developed to serve as inspiration for incoming students. The game logic will be designed and implemented in a high-level language such as C++.

3. Components and Budget

Cabinet Construction Electronics/Logic:

- \$30 Computer System
- \$120 Monitor
- \$50 Speakers
- \$50 Controls
- \$100 Cabinet Construction Materials (Wood, screws, paint, etc.)
- Total \$350

The Software components will be centered around physics, graphics, gameplay, scripting, UI, and input processing.

Section 2) This section is to be filled by the supervisor:

Supervisor Agreement:

I, Prof. Karen Rudre, have agreed to supervise this team/project.

Supervisor Signature: Karen Rudre

Date: Feb 14, 2019