

ECE Outreach Team Fall 2019

Programming Division

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Throughout the semester we will be working as a team to design demonstrations and activities that encourage students to be interested in Electrical and Computer Engineering at CSU. We will be participating in various events at CSU to reach current students searching for their major in addition to spending time at local high schools teaching the students about ECE. As we progress through the semester, we expect to learn more about programming and digital circuits and how to best approach these topics in a learning environment. This group focuses on programming and the digital aspect of ECE. From an Arduino activity to a physical implementation of digital logic gates, we hope to demonstrate the vast opportunities within the programming specialization.

Goals and expectations:

- Continue expanding our presence within highschools
- Continue refining Spring 2019 projects
- Introduce more demos and activities showcasing the diversity within the group
- Expand our presence within the CSU community and the Fort Collins area

Projects for Fall 2019:

- Minecraft Redstone Logic Gates: we will be continuing this project from last year with a few changes. We will be opening the world file to a server for students to view in addition to adding more circuits. Our main goal of this project is a concise walkthrough of multiple circuits through the virtual world of Minecraft.
- Digital Logic Circuit boxes: as a continuation from last semester, we hope to refine the design for the Digital Logic Boxes. These boxes have the ability to mimic any logic gate with a multiplexer connected to dip switches that will manually change the logic of the design. This semester, we hope to produce 10 more boxes for demos.
- CSU Circuits Website: The website is currently under construction and will be set up to fulfill senior design requirements as well as present our group to the public. The outreach website will be used as a reference and contain info on our demos. The outreach website will also eventually contain more info on electrical and computer engineering that will allow it to serve as a form of digital outreach and educate users.
- Arduino Stoplight: The Arduino stoplight will use LEDs and a breadboard along with an Arduino to create a demo where the lights turn on and off like a stoplight. This stoplight demo will be something that is reproducible by students and will be used to teach them about some basic coding and circuits. The students will be shown some basic code and will then be allowed to try it for themselves with the help of outreach members.
- Math Outreach: We will be reaching out to high schools in order to help students understand how math concepts relate to everyday electronics.
- CSS/HTML Tutorial: This will be a tutorial designed to get people interested in ece by showing them some basic CSS and HTML techniques. This will teach students about building websites and allow for some experimentation. Using CSS and HTML will allow the students to receive visual feedback to provide an interactive learning experience.