IEEE UCI OPS Program Syllabus
Fall 2020
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Course Description:

This course is an introduction to Embedded Systems. Most of the EE curriculum on our campus is focused on theory rather than application. OPS is intended to provide members a highly desired chance to practice skills learned in the classroom in a technical, hands-on way. This prepares members for internships or research and is an excellent resume builder. To provide that experience there will be four lectures over the quarter and one project that corresponds to each lecture, totaling four projects. By the end of this program, provided that you've followed along and completed each project, not only will you get your full security deposit back, but you should leave with a solid understanding of how to work with an Arduino and how to use each of the circuit components we will use over the course of the quarter.

Deposit: $60 (Refunded in full if you finish all projects on time)

Late Policy: No late projects

Components in OPS Package:

- 2 Breadboards
- 2 Arduino Nanos
- 2 Mini USB Cables
- 4 White LEDs
- 4 Red LEDs
- 4 Green LEDs
- 6 130 Ohm Resistors
- 1 Potentiometer
- 1 Active Buzzer
- 2 IR Receivers
- 2 IR Emitters
- 2 10K Ohm Resistors
- 4 Push Buttons
- 2 100nF Caps
- 1 OPS T-Shirt

Project Schedule (Lectures are on the Start Date of Each Project):

- **Project 1: Intro to Microcontrollers (Potentiometer Blink)**

- ➢ Description: You will try to make an LED blink at different frequencies using a Potentiometer
- ➢ Start Date: October 23rd, 2020
- ➢ Due Date: October 28th, 2020

❖ **Project 2: Ipoduino**

- ➢ Description: You will make a buzzer play several different songs of your choice, where you can also change which song is being played
- ➢ Start Date: October 30th, 2020
- ➢ Due Date: November 6th, 2020

❖ **Project 3: Distance Sensor**

- ➢ Description: You will have the Arduino print to the console an indication of how far it is from a surface
- ➢ Start Date: November 9th, 2020
- ➢ Due Date: November 20th, 2020

❖ **Project 4: Redlight, Greenlight**

- ➢ Description: You will build a game called Redlight, Greenlight using two Arduinos
- ➢ Start Date: November 23rd, 2020
- ➢ Due Date: December 11th, 2020

Name: _____

Date: _____

Signature: _____