Lab 3 - Pre Lab

ME 451 - Introduction to Instrumentation and Measurement Systems, Spring 2019

Complete the following questions for Lab 3 and submit your answers through Gradescope.

## Pre Lab Resources

* [Passive Filters guide](https://www.allaboutcircuits.com/textbook/alternating-current/chpt-8/what-is-a-filter/)
* [Interrupts guide 1](https://www.allaboutcircuits.com/technical-articles/using-interrupts-on-arduino/) ([another resource](http://www.engblaze.com/we-interrupt-this-program-to-bring-you-a-tutorial-on-arduino-interrupts/))
* [Arduino and interrupts](https://www.arduino.cc/reference/en/language/functions/external-interrupts/attachinterrupt/)

## Pre Lab Questions

1. Passive Filters
   1. Describe what a low-pass, high-pass, and band-pass filter do. Provide circuit diagrams for each filter. What is the cutoff frequency equation for each filter?
   2. What is the cutoff frequency?
2. Interrupts
   1. Describe what an interrupt does. How does it differ compared to what we have been doing so far (known as polling)?
   2. What are the advantages of using interrupts?
   3. What pins can you set up for an interrupt on the Arduino Uno?
   4. What is the function that sets up an interrupt in the Arduino coding language?
      1. What parameters does it take in? What do they do?