

**EE 311**  
**Assignment 06**

**March 12, 2018**  
**Due: March 19, 2018**

A digital filter program has been created for the ARM Nucleo board which accepts an analog input on pin A5 and outputs a filtered analog output on pin A4. Take your Nucleo board to Jeff or your instructor to get the code for this filter loaded.

Design and experiment to do the following.

1. Determine the sample frequency.
2. Determine the cutoff frequency (or frequencies if there are more than one).
3. Determine what type of filter this is.
4. Determine the frequency response magnitude graph.
5. Determine the step response.

Turn in the following:

1. Cover sheet with your name, class, assignment number, and the answers to questions 1, 2, and 3 above.
2. A bullet list detailing all of the tests you performed on the board to determine the results of each question above.
3. Any plots or data that you gathered as a result of your experiments.
4. All MATLAB<sup>®</sup> source code which you used in this project.
5. All oscilloscope screen shots.