Learning Objectives For ECE 421 Test 3
March 2021

Students should be able to demonstrate the following skills:

1. Evaluate how exponential and sinusoidal signals are processed by LTI systems.
2. Analyze the frequency response of difference equation systems.
3. Employ the geometric properties of how the pole zero plot affects the Fourier response of a difference equation system to evaluate such systems qualitatively.
4. Design simple filters based on pole and zero placement.
5. Identify different types of filters and signals (lowpass, bandpass, notch, etc.) based on their pole-zero plots.
6. Familiar with concepts introduced through projects.

And here are the formalities:

1. You need to work out your solutions by hand and justify (explain) your answers.
2. While the WebWork homeworks were along the lines of “training” questions that familiarize you with concepts, the Midterm will have questions at different difficulty levels. (See tests in previous years for examples.)
3. As an online course, in addition to using your notes and books, you may use your browser and software such as Matlab. However, while working on the test you should not text, email, or communicate with other people (certainly not other students) in any way, unless you are consulting with the course staff. By submitting the test, you will be acknowledging that you completed the work on your own without the help of others in any capacity. Any such aid would be unauthorized and a violation of the academic integrity policy.
4. There may be a question (or part of a question) that uses Matlab. (Again, see tests in previous years for examples.)