**ECE 4522/5514: DIgital Signal Processing**

# Computer Assignment (CA) No. 5: Digital Filter Realizations

The goal of this assignment is to expose you to computational efficiency issues.

Recall the general expression for a linear constant coefficient difference equation:



Compare and contrast C implementations of a second-order section ($p=q=2)$ using direct, canonical and cascade realizations. Implement each as a C function call and compare the efficiency of your code from an execution time and complexity point of view.