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

# Computer Assignment (CA) No. 4: Special DIgital Filtering

For this assignment, all you need to do is to turn in your results, which will include a text file containing the output from your terminal window (see below) and an audio file containing the filtered audio.

You will use the following command line for your program:

cat x.raw | my\_program > x\_out.raw

Set your window duration to 30 msec (240 samples). Demonstrate the your circular buffer program can read data in 60 sample chunks and process data in 240 sample chunks. It should read at least 4 chunks before it produces the first output, then read four more chunks, produce more output, and continue until the end of file is reached. Turn in a text file showing the sequence of operations as output from your program.

Next, implement the reverb filter described in the textbook and in class. Show that whether your frame duration is set to 80 or 160 samples you get the same output. Compare execution times for the program. Does it help to do I/O in bigger chunks?

Send me the output file containing the modified audio signal. It should sound like an echo and not introduce any artifacts.