ELEC3004/7312 Signals, Systems, and Control
Class Worksheet, Date: 16th of April 2012

Note: The purpose of this worksheet is to gain some experience in FIR filter design using windows. The matlab code can be based on wdesgn2.m and kwdesgn.m in the matlab demo code zip file.

http://courses.itee.uq.edu.au/elec3004/2012s1/_matlab/matlab.zip

1. Using a 3-term Blackman harris window, design an FIR lowpass filter to meet the following specifications:

   Passband = 0-700 Hz,
   Transition width = 200 Hz
   Passband ripple = 3db (< -3dB down at passband edge)
   Stopband attenuation = 60dB
   Sampling Frequency = 10kHz

2. Using the Kaiser Window, design an FIR lowpass filter to meet the following specifications:

   Passband = 150-250 Hz
   Transition width = 50Hz
   Passband ripple = 1dB
   Stopband attenuation = 70dB
   Sampling frequency = 1kHz