EEE3030 MATLAB Exercise 5

1. Use the window method in MATLAB to design an FIR low pass filter with the following specification:

Sampling frequency (fs)	10 kHz
Passband (f_p)	400 Hz
Stopband (f_s)	500 Hz
Passband ripple	< 0.1 dB
Stopband attenuation	> 50 dB

2. Verify the frequency response of the filter to check that it meets the specification.

3. Design a two stage filtering scheme with decimation to 2 kHz sampling frequency and verify that it meets the specification above.

4. Compare the computational load by calculation and by comparing execution time in MATLAB.