ELEC9721: Digital Signal Processing Theory and Applications

Lab 3B: FIR Filter Design Preparation

Filter Specifications:
- Sampling frequency 2500Hz
- Pass band frequency 0Hz to 500Hz
- Stop band frequencies 600Hz to 1250Hz.

Part C (Paper work) (*1 mark***)**

1. Design a linear phase FIR filter using windowing (rectangular) method for the above specifications. The length of the filter needs to be 21. Calculate the 21 filter coefficients.

Part D (Experiment using Matlab) (*1 mark***)**

2. Using Matlab, plot the magnitude and phase response of the filter keeping the x-axis scaled to Hz. Use both *freqz* and *fft*. Also plot the impulse response of the filter.