

EE 451: Homework 8

Given the following analog filter prototype

$$H(s) = \frac{\Omega_c}{s + \Omega_c}$$

assuming a sampling rate of 10kHz, design the following digital filters

1. lowpass filter with cutoff at 1 kHz
2. lowpass filter with cutoff at 4 kHz
3. bandpass filter with band edges 1 and 2 kHz