C2. Design of Digital Filters

Problems.

**Problem 1.** Determine the impulse response $h_d[n]$ of the ideal Low Pass Filter with Frequency Response shown below.

**Problem 2.** Determine the impulse response $h[n], n = 0,..., N$ for the FIR filter with the following parameters:

- **Passband:** $F=0$ to $2kHz$
- **Stopband:** $F>3kHz$ with $40dB$ attenuation
- **Sampling Frequency:** $F_s=12kHz$

**Problem 3:** Same specifications as in Problem 2, with at least $50dB$ attenuation in the stopband.

**Problem 4:** Same problem as in Problem 2, using `firpm`. Determine the parameters you would use to call it in Matlab.

Solutions:

**Problem 1:** [Video](http://faculty.nps.edu/rcristi/eo3404/C-filters/problems/2-problem1.mp4)

**Problem 2:** [Video](http://faculty.nps.edu/rcristi/eo3404/C-filters/problems/2-problem2.mp4)

**Problem 3:** [Video](http://faculty.nps.edu/rcristi/eo3404/C-filters/problems/2-problem3.mp4)
Problem 4: Video
http://faculty.nps.edu/rcristi/eo3404/c-filters/problems/2-problem4.wmv
http://faculty.nps.edu/rcristi/eo3404/c-filters/problems/2-problem4.mp4