Design and implement an FIR filter using a Hamming window or the Parks-McClellan method which meets the following specifications:

Sample frequency	11025 Hz
Pass band	0 Hz to 1500 Hz
Stop band	3000 Hz to fs/2
Pass band ripple	0.02
Stop band ripple	0.02

Minimize the filter order.

Use the coefficients produced by this MATLAB® m-file in a c-program to implement your filter on the ARM Nucleo board.

Verify that your filter works correctly by using a signal generator for input while observing the analog output.

Turn in the following:
1. Title page with your name, date turned in, and assignment number.
2. A magnitude vs frequency plot of your filter with blow-ups to show that it meets specifications.
3. A phase plot of your filter in degrees from 0 to fs/2.
4 A signed verification sheet (attached).

Verification Sheet

EE 311
Assignment 5

I verify that

_____

has successfully implemented a lowpass FIR filter that has a sample frequency of 11025Hz

_____

Signature (Blandford or Cron)