EE387 – LAB 04
FILTER DESIGN USING MATLAB

W.W.K. JAYATHUNGA

E/19/166

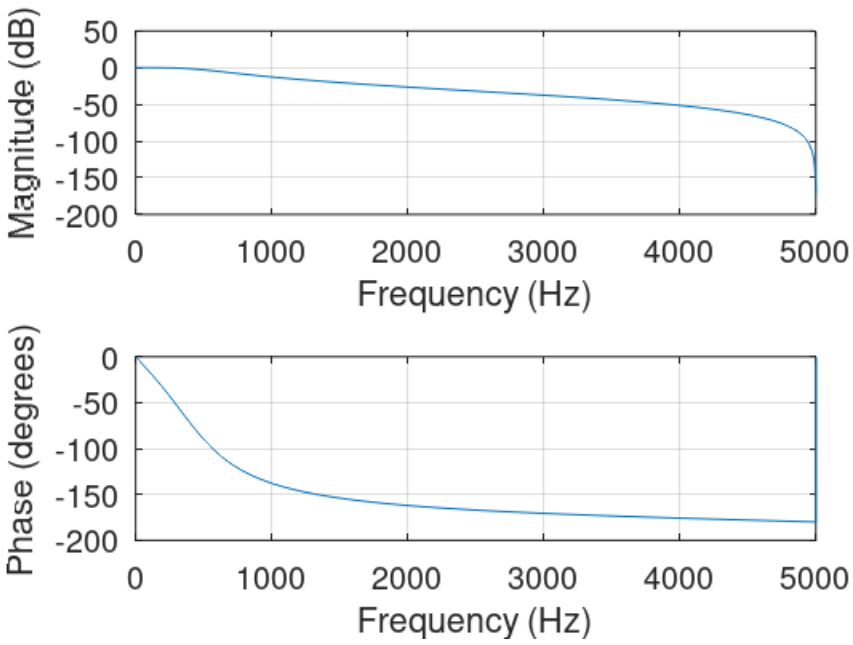
SEMESTER 06

11/06/2024

EXERCISE

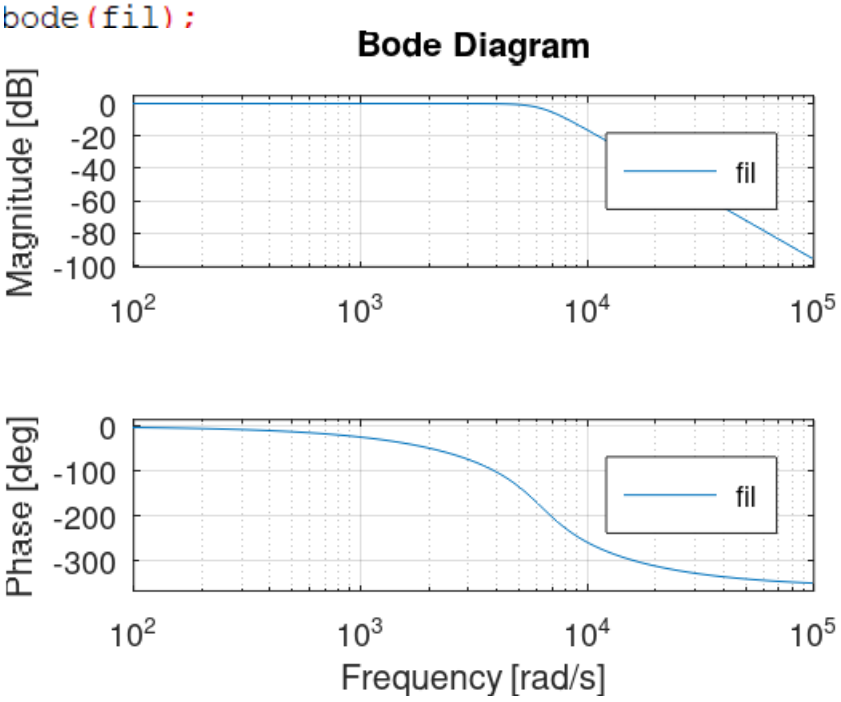
1.

```
clear all;
close all;
Fp = 1000; Fs = 5000; Fsample = 10000;
Wp = Fp / Fsample;
Ws = Fs / Fsample;
[N, Wn] = buttord(Wp, Ws, 3, 30);
[zeros_, poles_, scale_] = butter(N, Wn);
[a, b] = butter(N, Wn);
tf = zpk(zeros_, poles_, scale_);
pode(tf);
figure;
freqz(a, b, 5000, Fsample);
```



2.

```
clear all;
close all;
N = 4;
Fp = 1000;
Wp = 2 * pi * Fp;
[num, den] = butter(N, Wp, 's');
fil = tf(num, den);
bode(fil);
```



3.

```
clear all;
close all;
N = 4;
Rp = 2;
fp = 1000;
Wp = 2 * pi * fp;
[num, den] = cheby1(N, Rp, Wp, 's');
fil = tf(num, den);
bode(fil);
```