**Code:**

clc;

close all;

clear all;

% Import the CSV file correctly

problem11\_1 = readtable('/MATLAB Drive/BSP/EMG-data.csv');

% Extract time and EMG signal data

t = problem11\_1.time;

y1 = problem11\_1.channel1;

% Find the length of the data per second

N = length(y1);

ls = size(y1); % Size of y1

f = 1/N; % Sampling rate or frequency

fs = 3000;

T = 1/fs; % Period between each sample

t1 = (0 : N-1) \* T; % Time vector

Nyquist = fs / 2;

% Plot EMG Signal

figure;

subplot(3,1,1), plot(t, y1, 'b');

title('EMG signal');

xlabel('time (sec)');

ylabel('Amplitude (V)');

grid on;

% Compute Power Spectrum

Y = abs(fft(y1));

Y(1) = [];

power = abs(Y(1:N/2)).^2;

nyquist = 1 / (2 \* 0.001);

freq = (1:N/2) / (N/2) \* nyquist;

% Plot Power Spectrum

subplot(212), plot(freq, power), grid on;

xlabel('Sample number (in Frequency)')

ylabel('Power spectrum');

title({'Single-sided Power Spectrum' ...

' (Frequency shown on a log scale)'});

axis tight;

