Lab Report No 6



Digital Signal Processing

Submitted By:

Registration No:

Section:

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work”

Student Signature:

Department of Computer Systems Engineering

University of Engineering and Technology Peshawar

**CSE 402L: Digital Signal Processing**

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| --- | --- | --- | --- | --- |
| **Demonstration of Concepts** | **Poor (Does not meet expectation (1))**  The student failed to demonstrate a clear understanding of the assignment concepts | **Fair (Meet Expectation (2-3))**  The student demonstrated a clear understanding of some of the assignment concepts | **Good (Exceeds Expectation (4-5)**  The student demonstrated a clear understanding of the assignment concepts | **Score**  **30%** |
| **Accuracy** | The student completed ( <50%) tasks and provided MATLAB code and/or Simulink models with errors. Outputs shown are not correct in form of graphs (no labels) and/or tables along with incorrect analysis or remarks. | The student completed partial tasks (50% - <90%) with accurate MATLAB code and/or Simulink models. Correct outputs are shown in form of graphs (without labels) and/or tables along with correct analysis or remarks. | The student completed all required tasks (90%-100%) with accurate MATLAB code and/or Simulink models. Correct outputs are shown in form of labeled graphs and/or tables along with correct analysis or remarks. | **30%** |
| **Following Directions** | The student clearly failed to follow the verbal and written instructions to successfully complete the lab | The student failed to follow the some of the verbal and written instructions to successfully complete all requirements of the lab | The student followed the verbal and written instructions to successfully complete requirements of the lab | **20%** |
| **Time Utilization** | The student failed to complete even part of the lab in the allotted amount of time | The student failed to complete the entire lab in the allotted amount of time | The student completed the lab in its entirety in the allotted amount of time | **20%** |

Lab 6: Signal Processing Training

Title: Signal processing onramp

Learn basics of practical signal processing techniques in MATLAB. Use spectral analysis and filtering techniques to process, analyze, and extract information form signal data. Visit the following website: <https://matlabacademy.mathworks.com/details/signal-processing-onramp/signalprocessing> and perform the following tasks and attach the Certificate/ Progress Report acquired from MathWorks as part of the lab Report

Objectives

1. Course Overview
   1. Familiarize yourself with the course.
   2. Remarks along with final snapshot.
2. Spectral Analysis Workflow
   1. Import Signals into MATLAB and view power spectra.
   2. Remarks along with final snapshot.
3. Preprocessing Signals
   1. Clean up time base and align signals.
   2. Remarks along with final snapshot.
4. Spectral Analysis
   1. Perform spectral analysis to view signals in the frequency domain.
   2. Remarks along with final snapshot.
5. Filtering
   1. Filter signals using basic techniques.
   2. Remarks along with final snapshot.
6. Signal Measurements
   1. Extract information from signals.
   2. Remarks along with final snapshot.
7. Conclusion
   1. Learn next steps and give feedback on the course.
   2. Remarks along with final snapshot.