

EECS 360 - Signal and System Analysis

Laboratory Syllabus

Fall 2010

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Schedule: Tuesday 14:30-16:45 and Wednesday 10:00-12:15; 1005A Eaton Hall

Lab web page: http://people.eecs.ku.edu/~esp/class/F10_360/lab/

Labs: (Note - Lab schedule and contents might be changed with regards to the lecture.)

Session 1

Session 2

08/24/2010	08/25/2010	Lab 1: Introduction to Matlab
08/31/2010	09/01/2010	Lab 2: Matlab Functions
09/07/2010	09/08/2010	Lab 3: Loops in Matlab
09/14/2010	09/15/2010	Lab 4: Discrete Convolution
09/21/2010	09/22/2010	Lab 5: Fourier Series
09/28/2010	09/29/2010	Lab 6: Audio Filtering
10/05/2010	10/06/2010	Lab 7: Continuous time Fourier Series
10/12/2010	10/13/2010	Lab 8: Approximation of CTFT
10/19/2010	10/20/2010	Lab 9: DFT and FFT
10/26/2010	10/27/2010	Lab 10: Sampling and Signal Reconstruction
11/02/2010	11/03/2010	Lab 11: Sampling Frequency and Aliasing
11/09/2010	11/10/2010	Lab 12: Laplace Transform
11/16/2010	11/17/2010	Lab 13: Z-Transform
11/23/2010	12/01/2010	Lab 14: Introduction to Simulink

Requirement and Grading:

The grading is based on your performance during the lab session and your report. You are required to turn in a lab report **individually** for each lab with the lab report format attached below. Lab report has to be in printout format. Each weeks lab report is due the following week **BEFORE** the lab sessions. Your lab report will **NOT** be graded if turned in late. Exceptions might be considered with notice ahead of time.

Lab Report Format:

In general, your lab report should consist of the following sections:

1. Cover page: Lab title and number, date submitted, name, KUID.
2. Objective: Describe briefly what you are trying to do in this lab.
3. Procedure: How are you solving the problem, describe methodology and your approach.
4. Description: Answer all the questions listed in the lab handout with descriptions (plots, equations, derivation, and etc).

Note: Most of the plots generated by Matlab can be converted and imported into MS word compatible format.

5. Conclusion

Sample Lab Report: Next page

Lab 1 Report

Introduction to Matlab

Ima K.U. Student

KUID: 1234567

Date submitted: 01/01/2010

Objective:

Brief problem statement. Example - In this lab, we learn how to use simple functions in Matlab to solve engineering problems such as calculation and plotting.

Procedure:

Sequence of steps followed to achieve objective. We used matlab to calculate some function values with a certain range, and plot them.

Description:

Elaborate on the steps and provide results in the form of graphs and answers to specifically asked questions. Good place to identify and explain interesting and important phenomena.

Calculate function $f(x)=1+x^2$ with x ranging from $[-10, 10]$

```
f(x)= 101  82  65  50  37  26  17  10  5  2  1  2
5  10  17  26  37  50  65  82  101
```

```
x=[-10:10]; f =1+x.^2;
```

Plot function $f(x)$ by using command: `plot(x, f)`

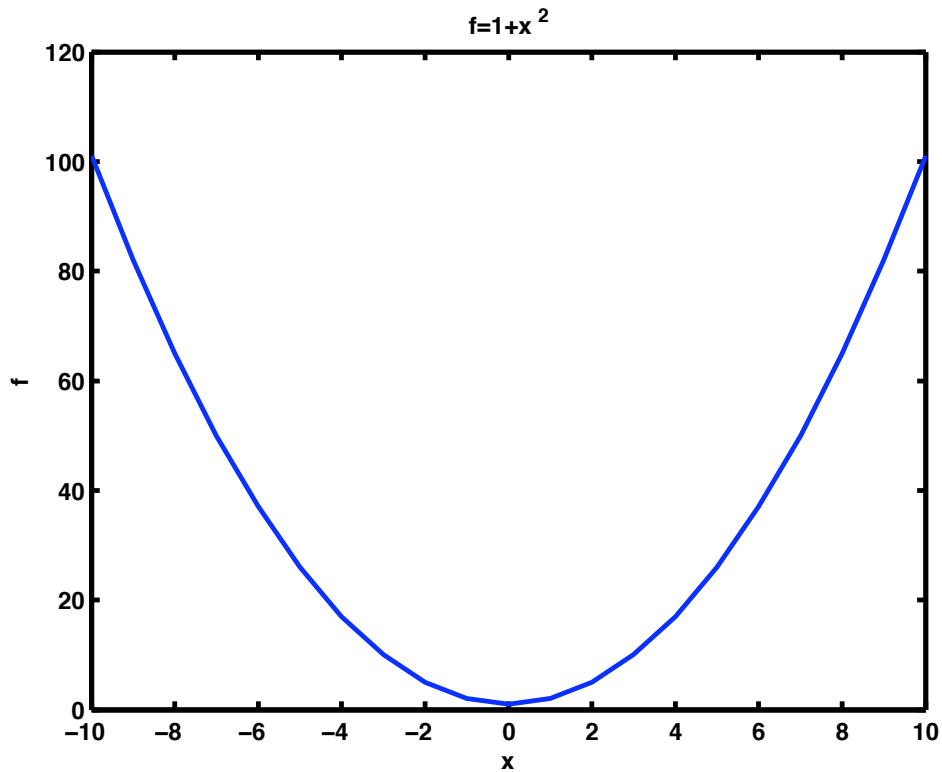


Figure 1: Sample Matlab Plot

Conclusion:

Brief text describing key concepts and lessons learnt by student.