

**EECS 360 - Signal and System Analysis**  
**Laboratory Syllabus**  
Spring 2010

**Instructor:** Prof. Eric Perrins

Email: esp "at" eecs.ku.edu

**Teaching Assistant:** Mahmood Hameed

Office: 2029 Eaton Hall

Office hours: Tuesday 13:30-14:30 and Thursday 11:30-12:30 and by appointment.

Email: hameed "at" ku.edu

**Schedule:** Tuesday 14:30-16:50 and Thursday 12:30-14:50; 1005A Eaton Hall

**Lab web page:** [http://people.eecs.ku.edu/~esp/class/S10\\_360/lab/](http://people.eecs.ku.edu/~esp/class/S10_360/lab/)

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

**Session 1**

**Session 2**

01/19/2010	01/21/2010	Lab 1: Introduction to Matlab
01/26/2010	01/28/2010	Lab 2: Matlab Functions
02/02/2010	02/04/2010	Lab 3: Loops in Matlab
02/09/2010	02/11/2010	Lab 4: Discrete Convolution
02/16/2010	02/18/2010	Lab 5: Fourier Series
02/23/2010	02/25/2010	Lab 6: Audio Filtering
03/02/2010	03/04/2010	Lab 7: Continuous time Fourier Series
03/09/2010	03/11/2010	Lab 8: Approximation of CTFT
03/23/2010	03/25/2010	Lab 9: DFT and FFT
03/30/2010	04/01/2010	Lab 10: Sampling and Signal Reconstruction
04/06/2010	04/08/2010	Lab 11: Sampling Frequency and Aliasing
04/13/2010	04/15/2010	Lab 12: Laplace Transform
04/20/2010	04/22/2010	Lab 13: Z-Transform
04/27/2010	04/29/2010	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, **NO** handwriting is accepted except some plots. 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. Objectives: 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*

## Objectives:

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

## Procedure:

We used matlab to calculate some function values with a certain range, and plot them.

## Description:

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			

Calculate function values by using command

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

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

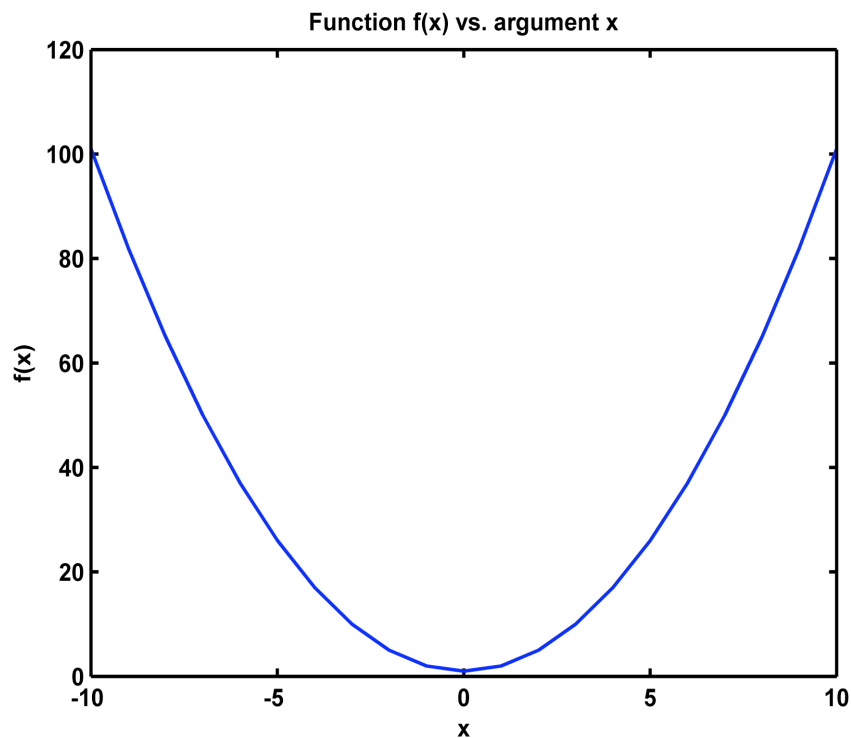


Figure 1: Sample Matlab Plot

## **Conclusion:**

I learned how to use Matlab to calculate and plot function values, and this lab was a success.