

# EECS 360 – Signal and System Analysis

## Laboratory Syllabus

Spring 2012

**Instructor:** Dr. Erik Perrins  
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**Teaching Assistant:** Mahmood Hameed  
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Office hours: Tuesday 12:30 – 2:30 pm and by appointment  
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**Schedule:** Tuesday 2:30 – 4:50 pm and Thursday 12:30 – 2:50 pm; 1005A Eaton Hall

**Lab web page:** [http://people.eecs.ku.edu/~esp/class/S12\\_360/lab/](http://people.eecs.ku.edu/~esp/class/S12_360/lab/)

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

### Session 1

### Session 2

01/24/2012	01/26/2012	Lab 1: Introduction to Matlab
01/31/2012	02/02/2012	Lab 2: Matlab Functions
02/07/2012	02/09/2012	Lab 3: Loops in Matlab
02/14/2012	02/16/2012	Lab 4: Discrete Convolution
02/21/2012	02/23/2012	Lab 5: Fourier Series
02/28/2012	03/01/2012	Lab 6: Audio Filtering
03/06/2012	03/08/2012	Lab 7: Continuous Time Fourier Series
03/13/2012	03/15/2012	Lab 8: Approximation of CTFT
03/27/2012	03/29/2012	Lab 9: DFT and FFT
04/03/2012	04/05/2012	Lab 10: Sampling and Signal Reconstruction
04/10/2012	04/12/2012	Lab 11: Sampling Frequency and Aliasing
04/17/2012	04/19/2012	Lab 12: Laplace Transform
04/24/2012	04/26/2012	Lab 13: Z-Transform

### Requirement and Grading:

The grading is based on your performance during the lab session and your lab report. You are required to turn in a lab report **individually** for each lab (see the lab report format attached below). Your report has to be in printout format. Each week's lab report is due the following week **before** the lab sessions. Lab reports will **not** be graded if turned in late. Exceptions might be considered with the 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.
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, 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: 01/01/2012*

**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)
```

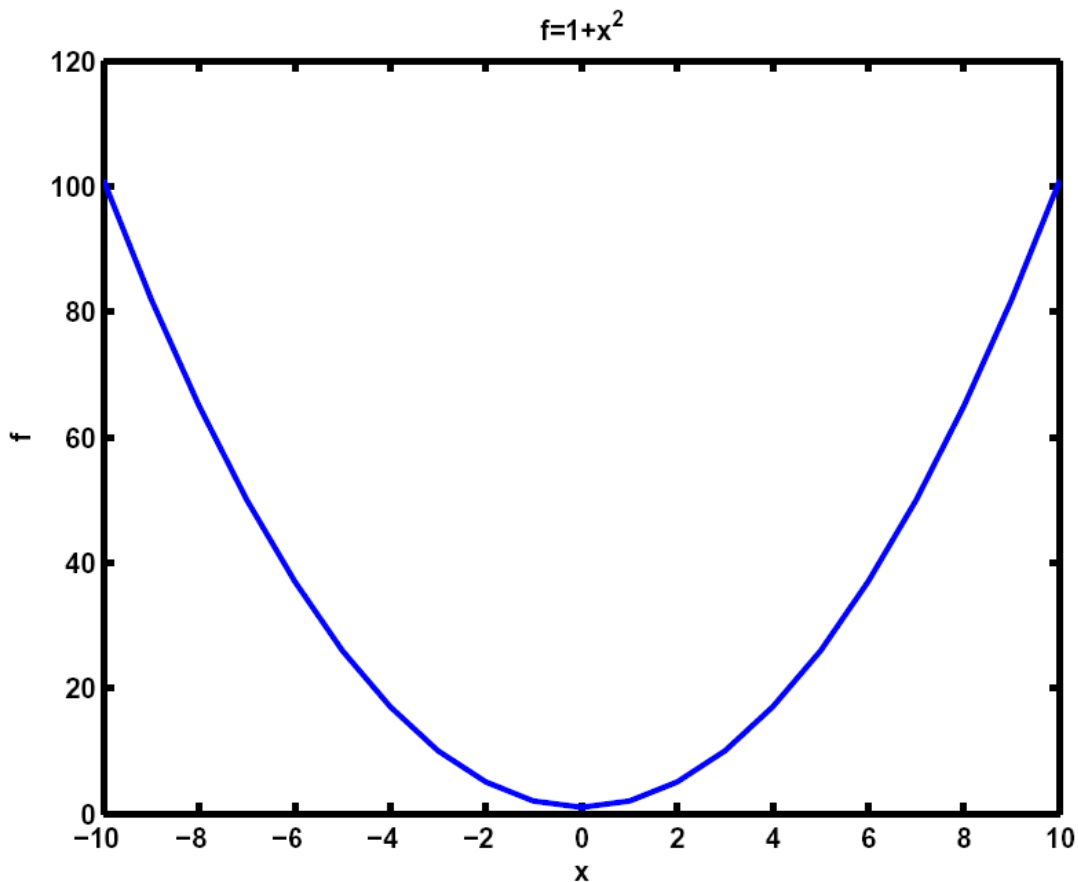


Figure 1: Sample Matlab Plot

**Conclusion:**

Brief text on lessons learnt by student.