EECS 360 Laboratory Syllabus (Draft)
Fall, 2007

Instructor: Prof. Erik Perrins
Teaching Assistant: Qi Chen

Schedule:
Tuesday and Thursday 14:30-16:45, 1005A Eaton Hall

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

08/21/07 Lab 1: Introduction to Matlab: Overview, basic commands, functions.
08/28/07 Lab 2: Signals
09/04/07 Lab 3: Systems
09/11/07 Lab 4: Continuous-time Linear Time Invariant Systems (Convolution)
09/18/07 Lab 5: Discrete-time Linear Time Invariant Systems (Convolution)
09/25/07 Lab 6: Continuous-time Fourier series
10/02/07 Lab 7: Discrete-time Fourier series
10/16/07 Lab 8: Continuous-time Fourier transform
10/23/07 Lab 9: Discrete-time Fourier series
10/30/07 Lab 10: Sampling and DFT
11/06/07 Lab 11: Sampling and DFT
11/13/07 Lab 12: Laplace transform
11/27/07 Lab 13: Laplace and Z transform
12/04/07 Lab 14: Z transform

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 week’s 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 completed, name, KUID
2. Objectives: describe briefly about the lab. Methodology, Expectations, objectives
3. Procedure: what’s the problem that you are trying to solve, or prove of concept and etc.
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

Mark Evens
08/15/2007
KUID: 1234567
Objectives:

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

Procedure:

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

Descriptions:

1. Calculate function \( f(x) = 1 + x^2 \) with \( x \) ranging from \([-10, 10]\)
\[
\begin{array}{ccccccccccccccc}
-10 & 82 & 65 & 50 & 37 & 26 & 17 & 10 & 5 & 2 & 1 & 2 & 5 & 10 & 17 & 26 & 37 \\
 50 & 65 & 82 & 101
\end{array}
\]

Calculate function values by using command

\[
x = [-10,10];
\]

\[
f = 1 + x .^2 ;
\]

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

![Fig. 1 Function \( f(x) \) versus argument \( x \)](image.png)
Conclusion

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