

EAS 31119 / B9039
Course #1 Notes

This course will use Matlab. What is Matlab?

Matlab is a computer program that is designed to carry-out numerical calculations. It is optimized for matrix analysis.

Matlab can save two file types: files that end in .m and files that end in .mat
.m files are code
.mat files are data

In Matlab, the prompt where you type commands looks like this:
>>

So, in these notes when you see >> you should read it as a command being typed into Matlab.

In programming, we will primarily write programs and then run the programs from the Matlab command line. The programs are written with a text editor and then stored as .m files.

When writing programs, we will have line of compile-able codes and we will also have lines where we make notes. These notes are not compiled and are referred to as “comments”. To designate a line in code as a comment, simply begin the line with a percent sign: %

Terms and Definitions

#1 Technical Definition: A **variable** is a storage location (identified by a [memory address](#)) paired with an associated [symbolic name](#) (an [identifier](#)), which contains some known or unknown quantity of information referred to as a [value](#).

#2 Colloquial Definition: A variable is a quantity of interest in a program. A place holder with information.
(*Variables in computer program have roughly the same role as they do in ordinary algebra.*)

For this class – we will use Definition #2

Naming variables when writing a program: you can name a variable whatever you want. However, using really long names, or names with underscore, or names with capital and lowercase can make for very tedious typing.

Assigning a value to a variable means: inputting data into the program.

One dimensional data: real or double*16

Two dimensional data: a matrix! With rows and columns.

A 2-D matrix has M rows and N columns, and M and N can be any integer greater than or equal to 1

Vector: a two-dimensional matrix in which the number of rows or columns is equal to 1.