Class 9: **Wednesday September 23**

SUMMARY Learning to use MATLAB Interctively
CURRENT READING Recktenwald, Chapter 2

Introduction to MATLAB

MATLAB is an interactive numerical computing environment. It allows both command-line instructions, and programs, which are placed in files ending with `.m`.

Today we will try running MATLAB and executing some basic operations. For the rest of the course, we will be using MATLAB as the environment in which we execute the numerical algorithms we will be studying. We will also use it as a tool which implements these algorithms to solve real-world, applied mathematics problems.

Numerical Methods with MATLAB

I have given you copies of Chapter 2 of Gerald Recktenwald's *Numerical Methods with MATLAB : Implementations and Applications*. We will be using this unpublished text, along with the accompanying Numerical Methods with Matlab (NMM) Toolbox, during the course.

MATLAB **Help**

You can use the command **`help`** *command* to get information on the command *command*. MATLAB is **not case-sensitive**.

You can use the command **`lookfor`** *string* to search the list of MATLAB commands for occurrences of the word *string*.

MATLAB **Skills**

We want to be able to do a number of things using MATLAB by the end of today's class.

- Use MATLAB as a calculator
- Use built-in functions and variables (e.g. `sin()` and `pi`)
- Define and use user-defined MATLAB variables
- Use the semi-colon to suppress output
- Use the comma to type more than one command per line
- Create vectors and matrices
- Apply mathematical operations to vector and matrices
- Use Matrix subscript notation (i.e. `M(1,2)`)
- Use the `linspace` and `logspace` operators
- Use the **Transpose** operator `'`
- Use the colon operator `:`
- Able to plot functions, with labels, titles, and added text