

MATLAB Laboratory Instructions

We have two references for general MATLAB knowledge:

- (1) **2008b-getstart.pdf (from Mathworks)**
- (2) **Matlab_Manual.pdf (from Boccio)**

The main learning document for the MATLAB portion of Physics 50 laboratory is MATLAB_Expts.pdf (By Cleve Moler). You should be able to learn MATLAB from MATLAB_Expts.pdf while using the references when somethings do not make sense. MATLAB also has a spectacular HELP system with descriptions of commands and many useful examples.

Must Cover:

Experiments (relevant MATLAB codes in folder "exm")

01 - Iteration	Exercises: 1.6,7,8,9,13
02 - Fibonacci Numbers	Exercises: 2.2,6,7,8
05 - Matrices	Exercises: 5.2,3,13,14
11 - Linear Equations	Exercises: 11.1,2,3,4
13 - Ordinary Differential Eqs	Exercises: 13.3,4,5,6,8
15 - Predators and Prey	Exercises: 15.8,9
16 - Shallow water Equations	Exercises: None

Other learning documents(Boccio):

Lab_3_2009.pdf - Ordinary Differential Equations
Matlab_Exercises.pdf - Try # 15-24 (Differential Equations)
Lab_4A_2009.pdf - Fast Fourier Transform(FFT) and
Fourier Transform - FTbrute.m and slits2.dat (Experiment 4)

Your Choice:

Other learning documents(Boccio):

Lab_1_2009.pdf-Derivative,Roots,Interpolation & Integration
Lab_2_2009.pdf-Random Numbers and Monte Carlo Methods
Lab_4_2009.pdf-Data and Spectral Analysis,Curve Fitting
Lab_4B_2009.pdf-2D Discrete Fourier Transform
Lab_5_2009.pdf-Partial Differential Equations

Experiments (relevant MATLAB codes in folder "exm")

03 - Calendars and Clocks	Exercises: None
04 - T Puzzle	Exercises: None
06 - Fractal Fern	Exercises: 6.6,8
07 - Magic Squares	Exercises: 7.4
08 - Tic Tac Toe Magic	Exercises: 8.5
09 - Game of Life	Exercises: 9.5,7
10 - Mandelbrot Set	Exercises: 10.6
12 - Google Page rank	Exercises: None
14 - Exponential Function	Exercises: None