

SIO 209 (Fall 2015)

MATLAB Bootcamp

Course description

Instructor: Ian Eisenman, (office) Nierenberg Hall 223, (email) eisenman@ucsd.edu, (phone) 858-822-5176.

Before first class: Install Matlab on your computer if you do not have it already. Instructions for downloading and installing Matlab through the SIO site license are [here](#). You are encouraged to bring a laptop with Matlab on it to class so you can follow along with examples, although this is not required.

Course schedule:

- Thu 9/10: Workspace, basic math, matrices & arrays, symbolic algebra, m-files, basic plotting. ([lec-1.pdf](#))
- Fri 9/11: Figure properties and text, loading & saving data, statistics. ([lec-2.pdf](#))
- Mon 9/14: Cells, selecting subsets of arrays, logical expression, if statements, for & while loops, case statements. ([lec-3.pdf](#))
- Tue 9/15: Functions, vectorizing code for efficiency, contour plots, mapping, netCDF files, saving vector graphics files, etc. ([lec-4.pdf](#)) ([m-files from this lecture](#))

Homework assignments: [HW-1.pdf](#) ([HW1_soln.zip](#)), [HW-2.pdf](#) ([HW2_soln.m](#)), [HW-3.pdf](#) ([HW3_soln.m](#)), [HW-4.pdf](#).

(HW solutions will be posted here after all are turned in. In the meantime, you can email me for the solutions.)

Date, time, location: Sept 10, 11, 14, & 15, 10am-12pm, Nierenberg Hall 101.

Synopsis: This course will provide a hands-on introduction to MATLAB. No prior experience is necessary. The course will cover variables, plotting, loops, m-files, reading and writing data files (including NetCDF), and an introduction to more advanced techniques. Course material including notes and homework will be posted here as the course progresses.

Prerequisites: You do not need any background with Matlab or computer programming. You just need access to a computer.

Office Hours: I will informally hold office hours immediately after each class. Students are also welcome to stop by my office anytime (knock if door is shut), but I recommend checking beforehand to make sure I am in.

Credit: This is a 1 unit S/U course. To get course credit, you must attend all 4 days of class and complete the daily homework.

Additional resources: All of the Matlab help files are available within the program (e.g., type `>>help plot` or `>>doc plot`) and also in the [online help](#). Regular Google searches also often work well as there is a large user community and on-line responses to questions as well as application-specific code sharing. You can also find code on the Matlab [file exchange](#). Finally, Mathworks (the company who developed Matlab) has an [online tutorial](#) as well as a detailed [manual](#).