

Psychology 119
Advanced Matlab

Instructor: Mark Steyvers (mark.steyvers@uci.edu)

Location/time: SBSG240, Mon-Wed 9:30-10:50am

Overview

This advanced course in Matlab is designed as a practical course on programming in Matlab and using Matlab as a tool for data analysis, modeling, and visualization. Part of the course will provide students with a background on explorative data analysis and data visualization, with an introduction into data representations such as structures and tables as well as techniques to reduce the dimensionality of high-dimensional data. Another part of the course will focus on computational statistics, where computer algorithms are used to solve problems in statistical analyses that would be too difficult to solve using analytic techniques.

Course format

The class will be taught without lectures. Instead, the emphasis will be on in-class programming exercises using MATLAB. Students will be required to attend two weekly laboratory sessions and completing assigned programming exercises in class. Students could benefit from a laptop with MATLAB installed (although this is not required). There will be no required textbook. Instead, course notes will be provided that contain brief introductions to the weekly topics along with a number of programming exercises and questions.

Grading

There will be no exams in this course. Over the course of the quarter, students are required to submit the answers to exercises. Often this involves showing the output of a Matlab program to demonstrate that the program performs accurately, displays the correct result, etc.

In addition, students are required to turn in a final project of a Matlab program. The program needs to be original software that is broadly related to data analysis, modeling, and/or visualization. It is fine if the student works on the final project during part of class time, especially if there are programming or conceptual issues that need to be addressed. The functionality of the code needs to be demonstrated in class.

Grading will be based on level of participation (attendance, completion of requirements in class exercises), quality of completed answers to exercises, and the final project.