Introduction to Scientific Computing in Matlab Undergraduate Seminar PSY 407 Instructor: Mike Wehr

This course will cover data analysis, exploration, and visualization using the Matlab environment.

No prior programming experience is required, but those with experience are also welcome.

Emphasis will be on practical methods for analyzing data from your own research. Regular problem sets and a term project are required.

Likely Topics:

Flow of Control: if, for, while, switch, scripts, functions, subfunctions, comments Data Types: matrices, the : operator, cells, structures, strings Graphics: plot, hist, pcolor, handle graphics Working with Data: matrix manipulation, linear algebra, the find command, vectorization Sound Processing: sound synthesis and playback, sound file IO File IO: save, fwrite, fread Signal Processing: filtering, resampling, spectral methods Data Acquisition: analog and digital input and output Image Processing: image manipulation, image file IO Statistics: ttests, regression, confidence limits, errorbars, nonparametric statistics