PSYCHOLOGY 234
CODING FOR EXPERIMENTAL PSYCHOLOGISTS
M/W 1:30-3:00 pm
Psychology 3834

INSTRUCTOR: Dr. Barry Giesbrecht
OFFICE: 3805 Psychology East
OFFICE HOURS: TBD

RESOURCES

Class Gauchospace:
https://gauchospace.ucsb.edu/courses/course/view.php?id=133858

MATLAB
https://www.software.ucsb.edu/info/matlab
https://www.mathworks.com
http://psychtoolbox.org/

Python
https://www.python.org/
https://www.psychopy.org/
https://www.spyder-ide.org/
https://www.anaconda.com/

GOALS, STRUCTURE, & EXPECTATIONS: There are three main goals of this course: 1) expose students to the fundamental principles of computer programming; 2) expose students to programming environments for controlling experiments and data analysis; 3) expose students to approaches for publicly sharing code. These goals will be achieved by using MATLAB (primary) and Python. The emphasis will be on developing skills through practice. The primary in-class activity is a class project that will entail designing and coding a simple experimental program. Each lecture will be divided into two sections, the first is a discussion section that is focused on a specific programming principle, toolbox/library, or technique; the second will be devoted to a practical application of the discussion topic. In addition to the class project, each student will design and code program of their own.

GRADING: Course grades will be based on participation in the class project-related activities (25%), the pseudocode for the individual project (25%; due Oct. 27), a demonstration of the individual project program (25%; 11/29, Dec. 1), and the code of the final program (25%; Dec. 8).

Schedule

Week 1
9/27: Overview & Intro to Programming Principles
9/29: MATLAB Basics
Week 2
10/4: From pseudocode to functional programs
10/6: Flow control and I/O (PsychShow Step 1)
Week 3
10/11: Psychtoolbox (PsychShow Step 2)
10/13: Working with stimuli (PsychShow Step 3)
Week 4
10/18: Getting responses (PsychShow Step 4)
10/20: Working with data (PsychShow Step 5)
Week 5
10/25: Documentation
10/27: Python basics I
Week 6
11/1: Python basics II
11/3: PsychoPy
Week 7
11/8: PsychShowPy
11/10: PsychShowPy
Week 8
11/15: PsychShowPy
11/17: PsychShowPy
Week 9
11/22: Working with GitHub
11/24: Working with GitHub
Week 10
11/29: Individual project demos
12/1: Individual project demos