Psychology 750, Fall 2022
Programming for Behavioral Data Science

Instructor:	Prof. Gary Lupyan; lupyan@wisc.edu [http://sapir.psych.wisc.edu/]
TA:	Mohan Ji; mji24@wisc.edu
Class info	3 credits; blended instruction.
Course type	Required course for professional Master's degree
Lecture Meetings:	**Thursday 9:00am-11:30am, Brogden 338**
TA Office Hours:	**Tuesdays 11am-12pm, Brogden 475.** Other times by appt.
Prof. Office Hours:	**Thursdays 12:15pm-1:15pm**, **Brogden 419.** Other times by appt.
Class website:	psych750.github.io
Class slack:	psych750.slack.com
Questions	Use Slack Channel. See email for invite.

Course Description: This is a basic programming course focused on data-science and experimental design. The course serves as the entry point to the Behavioral Data Science Master's Program. The primary goal is to give students with minimal programming experience a strong foundation in programming fundamentals, emphasizing tools and techniques necessary for data science. We will primarily use Python 3, but will take excursions into *R* for data-wrangling and to ensure that students are comfortable with other programming environments. In addition to teaching programming fundamentals, the course will serve as a crash course for data wrangling and visualization, web scraping, and data management. Importantly, the course will give students the knowledge and confidence to be able to learn more about these topics on their own.

Course Learning Outcomes

Students will:

a) learn fundamentals of Python and best practices for writing efficient and understandable code
b) learn how to code a variety of experimental paradigms and how to capture participants' responses
c) improve their debugging and problem-solving skills
d) learn basic data wrangling in R's tidyverse environment
e) learn how to scrape data and manage complex data structures
f) learn techniques for automating repetitive tasks
g) learn to be able to efficiently use and build on existing open-source APIs
h) have an opportunity to learn about topics specific to your interests such as image analysis and mouse- and eye-tracking

Requisites: This course accommodates students with no prior programming experience with the understanding that they may need additional outside instruction such as Data Camp's *Introduction to Python* course (4 hrs.) or similar brief online tutorials. You will need a laptop that you can use in class.

How Credit Hours are Met by the Course (Estimate)

30	hrs.	in class exercises and code review
30	hrs.	out of class tutorials
30	hrs.	out of class assignments
20	hrs.	peer code review
25	hrs.	final project
135	**hrs.**	**Total**

Grading:

Exercises (55%) – late submissions will be deducted 10% for the parts that are late. You must submit them before the solutions are posted to get any credit for the assignment. Submitting partial assignments is

Active participation in code reviews (20%)

Final project: (25%)

Grade assignment:

A	> 92%
AB	88.0-92%
B	84.0-87.9%
BC	79.0-83.9%
C	70.0-78.9%
D	60.0-69.9%
F	< 60%

Schedule. Please see the class website, for the current schedule along with assignment submission instructions and deadlines.

Ethics of Being a Student in the Department of Psychology:

The members of the faculty of the Department of Psychology at UW-Madison uphold the highest ethical standards of teaching and research. They expect their students to uphold the same standards of ethical conduct. By registering for this course, you are implicitly agreeing to conduct yourself with the utmost integrity throughout the semester.

In the Department of Psychology, acts of academic misconduct are taken very seriously. Such acts diminish the educational experience for all involved – students who commit the acts, classmates who would never consider engaging in such behaviors, and instructors. Academic misconduct includes, but is not limited to, cheating on assignments and exams, stealing exams, sabotaging the work of classmates, submitting fraudulent data, plagiarizing the work of classmates or published and/or online sources, acquiring previously written papers and submitting them (altered or unaltered) for course assignments, collaborating with classmates when such collaboration is not authorized, and assisting fellow students in acts of misconduct. Students who have knowledge that classmates have engaged in academic misconduct should report this to the instructor.

Complaints:

Occasionally, a student may have a complaint about a TA or course instructor. If that happens, you should feel free to discuss the matter directly with the TA or instructor. If the complaint is about the TA and you do not feel comfortable discussing it with him or her, you should discuss it with the course instructor. Complaints about mistakes in grading should be resolved with the TA and/or instructor in the great majority of cases. If the complaint is about the instructor (other than ordinary grading questions) and you do not feel comfortable discussing it with him or her, make an appointment to speak to the Chair of The Psychology Department, Professor Hill Goldsmith (hill.goldsmith@wisc.edu).
If your complaint concerns sexual harassment, you may also take your complaint to Dr. Linnea Burk, Clinical Associate Professor and Director, Psychology Research and Training Clinic, Room 315 Psychology (262-9079; burk@wisc.edu).

If you believe the TA or course instructor has discriminated against you because of your religion, race, gender, sexual orientation, disability, or ethnic background, you may talk to the Associate Chair or the Department Chair, or you may file a formal complaint with an Equal Opportunity Complaint Investigator in the UW-Madison Office of Compliance, Room 361 Bascom Hall, 608-265-6018 (https://compliance.wisc.edu/eo-complaint/)

Accommodations Policy:

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional

accommodations. Disability information, including instructional accommodations, as part of a student's educational record is confidential and protected under FERPA.