

Title: Python for Research Bootcamp mini-course 1 credit 16:695:621

Instructor: Tara Matise

Dates/Time/Location: Fall 2024 (TENTATIVE): this course is being taught in-person in Nelson Biolabs B125, 11:30-12:30 T/Th, Sept 3-Sept 26 (8 classes). Attendance is required at all classes. Office hours/extra help will be available outside of class-time if needed. **LAPTOP REQUIRED**

Description: This course is specifically designed for students who have no programming background, or learned to program but not in Python. This course will teach basic Python programming using the Jupyter notebook platform. Skills learned in this course will include using the Jupyter notebook platform, and use of variables, multiple data types, functions, conditional statements, math and Boolean operations, programming with loops, and input/output. Students will use their own laptops, but no software needs to be installed.

Structure: Each class will be a mix of instruction including lecture, live-coding demonstrations, and hands-on programming. Materials will be provided for additional practice between classes.

Outcome: Upon completion, students will be able to perform simple processing of data files such as parsing, filtering, and extracting subsets of data, merging data from multiple files, to aid with processing and analyzing data that is generated in the lab, downloaded from databases, or obtained from a collaborator.

Grading: Assessment will be conducted through short quizzes and a Python program coded during the final day of class.

Course Materials: Course materials will be provided by the instructor and will consist of presentation materials and materials freely available on Python instructional websites.

Schedule: This course will meet for eight 90-minute classes.

Date	Topic
Class 1	Intro to Jupyter Notebook
Class 2	Variables, Data Types I
Class 3	Data Types II, Conditional Expressions
Class 4	Loops, Complex Code Structure
Class 5	Input/Output
Class 6	String Formatting
Class 7	Writing Functions
Class 8	Putting It All Together