CSS01 IntroPython W2020

Instructor: John Serences

Instructor's Office: 5338 McGill Hall

Office Hours: W 9-10am

Meeting time: M/W 8-8:50am

Location: Mandeville B-210

Course description

This course will introduce new programmers to Python and Jupyter Notebooks. Experience in another language may help, but no programming experience is necessary as we'll start with the basics.

Along the way you'll learn how to implement some simple statistical tests and general analysis techniques that many of you will encounter in your course work and in research projects.

Goal of the course

At the end of the course you should have a good understanding of the Python language and the Jupyter environment. We will also cover various packages such as NumPy and Pandas that are commonly used in data science. You should also have some knowledge about the relative strengths and weaknesses of Python and other common languages like Matlab.

Class time

Each class will consist of lectures and in-class coding where you can follow along. In sections you will cover

problem sets that reinforce the topics covered in lecture.

Textbook

There is no required textbook for this course. However, there are many intro books out there that you might find helpful, including the book below that is written for people who are new to python and programming in general.

Title: Python crash course : a hands-on, project-based introduction to programming Author: Matthes, Eric

[amazon link here](#)

Exams

Short Quizzes

Starting week 2: At the start of section there will be a short quiz with questions focused on topics from class (approx. 5-10 multiple-choice questions). These quizzes will be given online using google forms.

Each of the quizzes will be worth 5 points.

You can drop two quizzes to give you some flexibility if you need to be late for a class or if you have other obligations that prevent you from preparing (best 7/9 quizzes for 35 total points).

Midterm

There will be a midterm that will cover material from the first 1/2 of the class. The midterm will be worth 50 points.

Final Project

Instead of a final exam you will have a final project that will require you to generate code to address a novel problem. More details will be provided during 2nd week. The final project will be worth 50 points.

In-section problem sets

Starting week 2 there will be a problem set that you will work on in section and out of class. These assignments are meant to give you the hands-on practice that you need to develop fluency in the language. You must complete 7/9 problem sets (drop the two lowest scores). The problem sets will be graded weekly and will count for 5 points each (35 total).

In class participation and attendance

Class participation and attendance is worth 10 points. To give you some flexibility, you will receive the full 10 points if you attend 80% of the lectures. Attendance will be monitored based on responses to questions using iClickers.

Letter grade in course

Grades will be based on the percentage of points earned on the midterm, final project, attendance/participation, and problem sets.

Letter grades will be assigned based on the following table:

A+ 97-100

A 93-96.99999

A- 90-92.99999

B+ 87-89.99999

B 83-86.99999

B- 80-82.99999

C+ 77-79.99999

C 73-76.99999

C- 70-72.99999

D+ 67-69.99999

D 63-66.99999

D- 60-62.99999

F 0-59.99999

Grades will not be rounded.

Academic Integrity

"Integrity of scholarship is essential for an academic community. The University expects that both faculty and students will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual to whom it is assigned, without unauthorized aid of any kind."

[Please read the full UCSD policy](#)

This course will also make use of online quizzes and exams via Google Forms. This means that each of you will be sent an email and will take quizzes/exams online with your user_name@ucsd.edu email linked to your grade. Taking a quiz or exam logged in as another student will be treated as a violation and you will be referred for disciplinary action. Similarly, emailing with or otherwise communicating with other students or anyone else during a quiz or exam will be treated as a violation and also referred for disciplinary action.

Course Topics

Jan 6,8: What is Python?, Jupyter Environment (Google Colab), First Program, Intro to object types and methods

Jan 13,15: More on object types, lists, for loops, list comprehensions, slicing lists

Jan 20,22: If…elif…else statements, dictionaries

Jan 27,29: while statements, writing functions

Midterm on Feb 3rd, no class on Feb 5th

Feb 10,12: Classes, object-oriented programming

Feb 17,19: File Input/Output, data formats for files (e.g. JSON, HDF5)

Feb 24,26: Pandas (data frames)

March 2,4: NumPy (numerical computing)

March 9,11: Data visualization (Matplotlib)

Final Project Due: TBD (when our final exam time is allocated by the Registrar)