JOUR 494: Python Coding for Data Journalism
2 units

Spring 2021 – Wednesdays – 6:00-8:20 p.m.
Section: 21539R
Location: ONLINE

Instructor: Iris Lee
Office: Online
Office Hours: Mondays 6:00-7:00 p.m. or by appointment
Contact Info: lee.iris.s@gmail.com, 925-899-4647, slack - TBD

Course Description
In this course you will learn to use Python, a popular and highly readable programming language that is a crucial tool for today's data journalists and news organizations.

Python is part of every step of a data journalism project: During data gathering, Python is used to scrape web pages and download data from available repositories. Once the data is gathered, Python is key to parsing and analyzing that data. Finally, Python can be used to prepare your data for publication.

Student Learning Outcomes
The goal of this course is to teach you how to use Python as it would be applied during a typical reporting project.

By the end of this course you should be able to write a Python script that can scrape data from a website, move data into and out of files, analyze data and streamline projects by automating repeated tasks.

The class will meet once a week for direct instruction, hands-on exercises and more. You will practice your coding skills with focused assignments. In addition, you must pitch and produce a project during the semester that will incorporate all the Python skills you have learned.

While coding is increasingly in demand in newsrooms, not everyone will come out of this course as a developer. But no one will be left behind, and at the very least you will understand the role and potential for Python scripting in the flow of a data project. Knowing the basics of Python is invaluable in getting a job in today's market.

Technological Proficiency and Hardware/Software Required
Students should be able to access the course through Zoom, with video and audio enabled.

Required Readings and Supplementary Materials
Along with the required texts in this course, there are a number of websites and tutorials you will be asked to read and work your way through, including:
> **Required:**
> ***Learn Python the Hard Way*** by Zed A. Shaw
>> **Website**: http://learnpythonthehardway.org/
>> **Amazon**: http://www.amazon.com/Learn-Python-Hard-Way-Introduction/dp/0321884914/
>
> ***Up and Running with Python*** by Joe Marini (on Lynda.com)
>> You have access to these videos through USC (http://itservices.usc.edu/lynda/)

References for HTML, CSS and JavaScript
- HTML5 tutorial: http://w3schools.com/html/default.asp
- CSS tutorial: http://w3schools.com/css/default.asp
- JavaScript tutorial: http://w3schools.com/js/default.asp

These are also good reference and learning sites:
Lynda (https://itservices.usc.edu/lynda/)
Codecademy (http://www.codecademy.com)
W3Schools (http://www.w3schools.com/)
Stack Overflow (http://stackoverflow.com/)
First Python Notebook (http://www.firstpythonnotebook.org/)
Altair (https://altair-viz.github.io/)

Description of Assignments
Assignment 1: Variables, data types and structures problem set. **Due 6 p.m. Wednesday, February 10**
Assignment 2: Loops, conditionals, functions and file I/O problem set. **Due 6 p.m. Wednesday, March 10**
Assignment 3: Scraping and automated tasks problem set. **Due 6 p.m. Wednesday, April 21**
Final Project: Due on date of scheduled final exam **Due 7 p.m. on Wednesday, May 5**

IV. Grading
a. Breakdown of Grade

Assignment	Points	% of Grade
Assignment 1: Variables, data types and structures	20	20
Assignment 2: Loops, conditionals, functions and file I/O	25	25
Assignment 3: Scraping and automated tasks	25	25
Final Project	25	25
Participation	5	5
Total	**100**	**100**

b. Grading Scale
The final letter grade will be calculated as such:

95% to 100%: A	80% to 83%: B-	67% to 69%: D+
90% to 94%: A-	77% to 79%: C+	64% to 66%: D
87% to 89%: B+	74% to 76%: C	60% to 63%: D-
84% to 86%: B	70% to 73%: C-	0% to 59%: F

c. Grading Standards
The content of your projects must meet all journalistic standards: adherence to AP style, grammatically correct, well proofed, and most importantly, the work must be your own (see the plagiarism policies below under IX.

Policies and Procedures).

This is a coding class, so format, neatness and documentation will be graded. Participation will be graded on a number of criteria, including (but not exclusively) collaboration and helping out classmates if you understand something that they are struggling with. I also grade on effort. Not everyone will find this course material easy, but if you try your hardest your grade will reflect that.

"A" and "B" projects/assignments should have ALL components; i.e., students should not get higher than a C+ unless everything is turned in.

- "A" project/assignment is submitted on time, has only minor bugs, code well formatted and documented, and shows exceptional effort and creativity.
- "B" project/assignment is on time, and completed but requires more than minor bug fixes and/or is not documented correctly or is badly formatted. Fulfills all basic requirements, but nothing beyond that.
- "C" project/assignment is late, is not complete and/or functioning. Requires major bug fixes. The student should have requested help from the professor.
- "D" project/assignment is late, incomplete, failed to meet the major criteria of the assignment, has numerous errors. Should not have been submitted.
- "F" project/assignment has not been submitted or is plagiarized from someone else's code or project. You can use someone else's code as example or inspiration, but you cannot present someone else's project as your own.

In addition, style errors and other breaches of journalistic standards will result in point deductions.
Grading will be completed and posted in two weeks

Grading Timeline
Grading will be completed and posted within 10 days from due date.

Assignment Rubrics
Each assignment will consist of various tasks. Points will be distributed equally depending on the number of tasks. For example, Assignment 1 (20 points) consists of five tasks. Each task will be worth four points. However, it's important to remember that each new task will largely depend on successful execution of the previous task. If you don't get the first task right, it's possible that you will not be able to move on to subsequent tasks.

Assignment Submission Policy
A. All assignments are due on the dates specified. Lacking prior discussion and agreement with the instructor, late assignments will automatically be given a grade of F.
B. Assignments should be submitted through Blackboard. All coding assignments should be "zipped up" or compressed and uploaded to the assignment.

Laptop Policy
All undergraduate and graduate Annenberg majors and minors are required to have a PC or Apple laptop that can be used in Annenberg classes. Please refer to the **Annenberg Digital Lounge** for more information. To connect to USC's Secure Wireless network, please visit USC's **Information Technology Services** website.

Add/Drop Dates for Session 060 (15 weeks: 1/15/2021 – 4/30/2021; Final Exam Period: 5/5-12/2021)
Friday, February 5: Last day to register and add classes for Session 060
Friday, February 5: Last day to drop a class without a mark of "W," except for Monday-only classes, and receive a refund for Session 060

Tuesday, February 9: Last day to drop a Monday-only class without a mark of "W" and receive a refund for Session 060

Friday, March 5: Last day to drop a course without a mark of "W" on the transcript for Session 060. Mark of "W" will still appear on student record and STARS report and tuition charges still apply. [Please drop any course by the end of week three (or the 20 percent mark of the session) to avoid tuition charges.]

Friday, March 5: Last day to change pass/no pass to letter grade for Session 060. [All major and minor courses must be taken for a letter grade.]

Friday, April 9: Last day to drop a class with a mark of "W" for Session 060

Course Schedule: A Weekly Breakdown

Important note to students: Be advised that this syllabus is subject to change - and probably will change - based on the progress of the class, news events, and/or guest speaker availability.

IMPORTANT NOTE: There will be hands-on work every class, so always bring your laptop. Make sure you have a text editor (not a word processor like Microsoft Word) installed on your computer.
Suggested:
        Visual Studio Code for Mac and PC
        Sublime Text for Mac and PC

	Topics/Daily Activities	**Readings/Preparation**	**Deliverable/Due Dates**
Week 1 **Dates: 1/20**	**Introductions and setting up the environment.** Start with introductions and syllabus overview. Overview of Python development in newsrooms. Setting up Python development environment you will be using throughout the course.	**Reading:** *Learn Python the Hard Way:* Exercise 0-2	
Week 2 **Dates: 1/27**	**Python overview.** A Python language overview, introductory exercise "Hello, world!" and a discussion comments, math and variables.	**Reading:** *Learn Python the Hard Way:* Exercise 3-9	
Week 3 **Dates: 2/3**	**Building blocks Part 1:** Cover more variables, strings, numbers, lists, dictionaries.	**Reading:** *Learn Python the Hard Way:* Exercise 11-17, 18-21	

Week 4 Dates: 2/10	**Building blocks Part 2:** Introduction to functions and Reading from and writing to files.	**Reading:** *Learn Python the Hard Way:* Exercise 27-33	**Assignment 1 due February 10**
Week 5 Dates: 2/17	**Building blocks Part 3:** Introduction to loops and conditionals.	**Reading:** *First Python Notebook:* Chapters 1-9	
Week 6 Dates: 2/24	**Intro to data analysis.** Start using the Pandas library to analyze data files in Python.	**Reading:** *First Python Notebook:* Chapters 10-11	
Week 7 Dates: 3/3	**More Pandas.** Continue data analysis with group by and sorting.		
Week 8 Dates: 3/10	**Charts in data analysis.** Use other Python libraries to make charts from datasets.		**Assignment 2 due March 10**
Week 9 Dates: 3/17	**Cleaning up files.** Fixing issues with datasets prior to analysis.		
Week 10 Dates: 3/24	**Analyzing very large datasets.** Open files too large for Excel, analyze them with news judgement.		
Week 11 Dates: 3/31	**Analyzing very large datasets.** Open files too large for Excel, analyze them with news judgement.		**FP milestone:** You should have your topic set, some coding and research started.
Week 12 Dates: 4/7		**Wellness Day: Wednesday, April 7 – no classes]**	
Week 13 Dates: 4/14	**Web scraping Part 1:** Putting Python to work scraping and processing data from a website.		
Week 14 Dates: 4/21	**Web scraping Part 2:** Submitting forms. More scraping and setting up repeatable code.		**Assignment 3 due April 21**

Week 15 Dates: 4/28	Web scraping Part 4: Request data through an API to create a spreadsheet. Our data will come in a new format: JSON.		
FINAL EXAM PERIOD Dates: 5/5	Final Project presentation: Present final projects to the class.		Final project due by 7 p.m. Wednesday, May 5

Policies and Procedures
Additional Policies
Attendance will be part of your participation points

Communication
My preferred communication is through Slack from 9 a.m. to 6 p.m. After 6 p.m., please email or text me.

Internships
The value of professional internships as part of the overall educational experience of our students has long been recognized by the School of Journalism. Accordingly, while internships are not required for successful completion of this course, any student enrolled in this course that undertakes and completes an approved, non-paid internship during this semester shall earn academic extra credit herein of an amount equal to 1 percent of the total available semester points for this course. To receive instructor approval, a student must request an internship letter from the Annenberg Career Development Office and bring it to the instructor to sign by the end of the third week of classes. The student must submit the signed letter to the media organization, along with the evaluation form provided by the Career Development Office. The form should be filled out by the intern supervisor and returned to the instructor at the end of the semester. No credit will be given if an evaluation form is not turned into the instructor by the last day of class. Note: The internship must by unpaid and can only be applied to one journalism or public relations class.

Statement on Academic Conduct and Support Systems
a. Academic Conduct
Plagiarism
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

USC School of Journalism Policy on Academic Integrity
The following is the USC Annenberg School of Journalism's policy on academic integrity and repeated in the syllabus for every course in the school:

"Since its founding, the USC School of Journalism has maintained a commitment to the highest standards of ethical conduct and academic excellence. Any student found plagiarizing, fabricating, cheating on examinations, and/or purchasing papers or other assignments faces sanctions ranging from an 'F' on the assignment to dismissal from the School of Journalism. All academic integrity violations will be reported to the office of Student Judicial Affairs & Community Standards (SJACS), as per university policy, as well as journalism school administrators."

In addition, it is assumed that the work you submit for this course is work you have produced entirely by yourself, and has not been previously produced by you for submission in another course or Learning Lab, without approval of the instructor.

b. Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

Annenberg Student Success Fund
https://annenberg.usc.edu/current-students/resources/additional-funding-resources
The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.

Breaking Bread Program [undergraduate students only]
https://undergrad.usc.edu/faculty/bread/
The Breaking Bread Program is designed to provide individual undergraduate students with an opportunity to meet and have scholarly discussions with faculty members outside of the normal classroom setting. Through this program, students and faculty enjoy good company and great conversation by literally "breaking bread" over a meal together and USC will pick up the tab! Your meal event can take place anywhere outside of the normal classroom setting. Your venue can be a restaurant or eatery on or off-campus.

About Your Instructor
Iris Lee is a data reporter on the Los Angeles Times Data & Graphics Desk.