Comm 158: Python for Social Sciences

Lecture
When   : Mondays & Wednesdays, 12:30 – 1:45 pm
Where   : DODD 78

Section
When   : Mondays, 6:00 - 7: 00 pm
Where   : Bunche 2209A

Instructor Info
Professor   : Tao Gao (Dept of Communication)
Email   : taogao@ucla.edu
Office Hours : Mondays 7:00 - 8:00 pm
Office   : Bunche 2221

Teaching Assistant
TA   : Grace Miao
Email   : q.miao@ucla.edu
Office Hours : Tuesdays 4:30 - 5:30 pm
Office   : Rolfe 2133

Course Description
This beginner-friendly course delves into the practical applications of Python in social sciences. Ideal for processing large datasets and automating tasks, Python's versatility extends to visualization and artificial intelligence. Students will learn the basics of Python coding, and focus on the essential Pandas library for data analysis. The course adopts a project-oriented approach, allowing direct application of skills in social science scenarios. Additionally, students will explore using ChatGPT to accelerate their coding learning process.

Learning Objectives and Outcomes
1. *Beginner Coding Introduction:* Introduce students to basic coding with an emphasis on Python.
2. *Python Syntax and Structures:* Focus on basic Python syntax and data structures for problem-solving.
3. *Python Essential Libraries:* Understand key Python libraries for data processing, such as Pandas.
4. *Good Coding Practices:* Emphasize writing safe, readable, and maintainable code.
5. *ChatGPT for Coding:* Utilize ChatGPT to enhance learning speed and assist with debugging tasks.

Tentative Syllabus
• Lecture 1: Course Introduction
• Lecture 2: Introduction to Lists, Tuples, and Sets
• Lecture 3: Mastering List Comprehensions
• Lecture 4: Introduction to Dictionaries and Dictionary Comprehensions
• Lecture 5: Understanding the 'Split-Apply-Combine' Strategy
• Lecture 6: Exploring Python's Itertools Library
• Lecture 7: Python Functions and Modular Coding
• Lecture 8: File Handling in Python - Reading and Writing Files
• Lecture 9: Working with Python Paths and the OS Library
• Lecture 10: Mid-Term Project Introduction and Guidelines
• Lecture 11: Getting Started with Pandas and DataFrames

- Lecture 12: Reading and Writing Excel Files
- Lecture 13: Merging, Joining, and Concatenating Data
- Lecture 14: Data Transformation and Cleaning
- Lecture 15: Visualizing Data- Creating Figures and Tables
- Lecture 16: Advanced Data Analysis with 'Split-Apply-Combine'
- Lecture 17: Introduction to Web Scraping with Python
- Lecture 18: Processing and Analyzing Web Scraped Data
- Lecture 19: Final Project Preparations
- Lecture 20: Final Project Presentations and Course Wrap-Up

Expected Work
- *Weekly Assignments (20%):* Weekly homework exercises that reinforce Python concepts and data manipulation.
- *Mid-Term Project (15%)*: A mid-term project that involves applying Python skills, data structures, and 'Split-Process-Combine' strategy to analyze a dataset relevant to social sciences. This project will include data preprocessing, analysis, and presentation.
- *Final Project (25%)*: The final project will be a comprehensive project that integrates all course concepts. Students will collect data through web scraping, process it using Pandas, conduct data analysis, and present their findings. This project will demonstrate their ability to tackle real-world social science research tasks.
- *Mid-Term Exam* (20%): In person exam on Wednesday Week 5.
- *Final Exam* (20%): In person exam on Wednesday Week 10.

Grading Scale
- A (90-100%): Exceptional understanding and application of course concepts, high-quality work, active participation, and exceptional problem-solving.
- B (80-89%): Solid understanding, good work, active participation, and strong problem-solving.
- C (70-79%): Adequate understanding, acceptable work, regular participation, and satisfactory problem-solving.
- D (60-69%): Basic understanding, marginal work, limited participation, and weak problem-solving.
- F (Below 60%): Insufficient understanding, poor work, minimal participation, and inadequate problem-solving.Grade Dispute Policy

Grading Dispute Policy
1. Initial Review with Teaching Assistant (TA)
Students who wish to dispute their grades must first schedule a review session with the TA. During this session, the TA will go through the code with the student to address any concerns or clarifications.
2. Escalation to Instructor
If the grade dispute cannot be resolved between the student and the TA, the student may escalate the matter by requesting the instructor to review their code.
3. Potential Outcomes of Instructor Review
The instructor will approach the review without considering the TA's previous grading, ensuring an unbiased evaluation. It is important for students to understand that the instructor's re-evaluation can result in any of the following outcomes:
- An increase in the grade.
- No change in the grade.
- A decrease in the grade.

Late Policy

All assignments must be turned in on time. We will allow a total of seven late days **cumulatively for the entire quarter** – no explanation required. We will not make any additional allowances for late submissions: the late days are intended to provide for exceptional circumstances, and students should avoid using them unless absolutely necessary. Any assignments that are submitted late (with insufficient late days remaining) will not be graded.

Office Hours Policy

If a student misses a lecture, they are not permitted to approach the instructor during office hours to request a recap of the missed content unless the following conditions are met:
- The student must notify the instructor in advance of their anticipated absence.
- The reason for the absence must be communicated, and the instructor's approval must be obtained.

Only with prior approval will the instructor consider requests to review missed lecture content during office hours.

Student Resources for Student Well-Being, Social Belonging & Academic Success

UCLA has a multitude of resources and services available to all undergraduates, many of which are listed below. Please explore these resources and services so you know what's available to you.

General Student Resources

Academic Success & Counseling Resources

Health & Wellness Resources

Career & Professional Resources

Accessibility & Inclusion Resources

Advocacy & Social Belonging Resources

Extracurricular Activity Resources

Financial Resources

Undergraduate Resources to Support Learning in STEM

Academic Integrity

UCLA is a community of scholars. In this community, all members including faculty, staff and students alike are responsible for maintaining standards of academic honesty. As a student and member of the University community, you are here to get an education and are, therefore, expected to demonstrate integrity in your academic endeavors. You are evaluated on your own merits. Cheating, plagiarism, collaborative work, multiple submissions without the permission of the professor, or other kinds of academic dishonesty are considered unacceptable behavior and will result in formal disciplinary proceedings usually resulting in *suspension* or *dismissal*.

Forms of Academic Dishonesty

As specified in the UCLA Student Conduct Code, violations or attempted violations of academic dishonesty include, but are not limited to, cheating, fabrication, plagiarism, multiple submissions or facilitating academic dishonesty (see below for detailed definitions).

While you are here at UCLA, you may find yourself in a situation where cheating seems like a viable choice. You may rationalize to yourself that "Everyone else does it"…Well, they don't. And will that matter when YOU get caught? NO! If you are unsure whether what you are considering doing is cheating, just ask yourself …how would you feel if your actions were public, for anyone to see? Would you feel embarrassed or ashamed? If the answer is yes, that's a good indicator that you are taking a risk and rationalizing it to yourself.

If after reviewing the information below, you are still unclear about any of the items – don't take chances, don't just take your well-intentioned friend's advice – ASK your TA or your Professor. Know the rules - Ignorance is NO defense. In addition, avoid placing yourself in situations which might lead your TA or Professor to suspect

you of cheating. For example, during an exam don't sit next to someone with whom you studied in case your answers end up looking "too similar."

Alternatives to Academic Dishonesty

Seek out help – meet with your TA or Professor, ask if there is special tutoring available.

Drop the course – can you take it next quarter when you might feel more prepared and less pressured?

Ask for an extension – if you explain your situation to your TA or Professor, they might grant you an extended deadline.

See a counselor at Student Psychological Services, and/or your school, college or department – UCLA has many resources for students who are feeling the stresses of academic and personal pressures (see list below)

Remember, getting caught cheating *affects more than just your GPA*. How will you explain to your parents, family and friends that you have been suspended or dismissed? How will it affect your financial aid award and/or scholarship money? Will you be required to, and be able to pay back that money if you are no longer a student? If you live in the residence halls, where will you go if you are told you can no longer live there? You have worked very hard to get here, so don't cheat! If you would like more information, please come see us at the Dean of Students' Office in 1206 Murphy Hall, call us at (310) 825-3871 or visit our Web site at www.deanofstudents.ucla.edu.

Cheating

Unauthorized acquisition of knowledge of an examination or part of an examination

- Allowing another person to take a quiz, exam, or similar evaluation for you

- Using unauthorized material, information, or study aids in any academic exercise or examination – textbook, notes, formula list, calculator, etc.

- Unauthorized collaboration in providing or requesting assistance, such as sharing information

- Unauthorized use of someone else's data in completing a computer exercise

- Altering a graded exam or assignment and requesting that it be regraded

Plagiarism

Presenting another's words or ideas as if they were one's own

- Submitting as your own through purchase or otherwise, part of or an entire work produced verbatim by someone else

- Paraphrasing ideas, data or writing without properly acknowledging the source

- Unauthorized transfer and use of someone else's computer file as your own

- Unauthorized use of someone else's data in completing a computer exercise

Multiple Submissions

Submitting the same work (with exact or similar content) in more than one class without permission from the instructor to do so. This includes courses you are currently taking, as well as courses you might take in another quarter

Facilitating Academic Dishonesty

Participating in any action that compromises the integrity if the academic standards of the University; assisting another to commit an act of academic dishonesty

- Taking a quiz, exam, or similar evaluation in place of another person

- Allowing another student to copy from you

- Providing material or other information to another student with knowledge that such assistance could be used in any of the violations stated above (e.g., giving test information to students in other discussion sections of the same course)

Fabrication

Falsification or invention of any information in an academic exercise

- Altering data to support research

- Presenting results from research that was not performed

- Crediting source material that was not used for research

Places to go for help when you are feeling overwhelmed and need personal and/or academic assistance

In addition to the resources listed below, you can get assistance from your academic advisor. The Academic Counseling page has more information on finding your advisor.

Counseling and Psychological Services

Wooden Center West: (310) 825-0768

www.caps.ucla.edu

Center for Academic Advising In College

A316 Murphy Hall: (310) 825-1965

https://caac.ucla.edu/

Letters & Science Counseling Service

A316 Murphy Hall: (310) 825-1965

https://caac.ucla.edu/contact-us/

Academic Support on the Hill – UCLA Residential Life

Study spaces, computer labs, and free workshops on a wide variety of issues relating to academic & personal success

(310) 825-9315

https://reslife.ucla.edu/academics/

Lesbian, Gay, Bisexual and Transgender Resource Center

Student Activities Center, B36: (310) 206-3628

www.lgbt.ucla.edu

Center for Accessible Education

A255 Murphy Hall: (310) 825-1501, TDD (310) 206-6083

https://cae.ucla.edu/

Dashew Center for International Students and Scholars

106 Bradley Hall: (310) 825-1681

www.internationalcenter.ucla.edu

Student Legal Services

A239 Murphy Hall: (310) 825-9894

www.studentlegal.ucla.edu

Dean of Students Office

1206 Murphy Hall: (310) 825-3871

www.deanofstudents.ucla.edu

Title IX

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 330 De Neve Dr., CAREadvocate@careprogram.ucla.edu, (310) 206-2465. In addition, Counseling and Psychological Services (CAPS) provides confidential counseling to all students and can be reached 24/7 at (310) 825-0768. You can also report sexual violence or sexual harassment directly to the University's Title IX Coordinator, 2241 Murphy Hall, titleix@equity.ucla.edu, (310) 206-3417. Reports to law enforcement can be made to UCPD at (310) 825-1491.