

Political Science 6: Introduction to Data Analysis

Instructor: Maxim Ananyev

Email: ananyev@ucla.edu

Lectures: Tuesday/Thursday, 3.15 pm - 5.20 pm, Bunche Hall 1209B

Office Hours: Thursday, 12 pm - 2 pm, Bunche Hall 3288

Course website: <https://moodle2.sscnet.ucla.edu/course/view/171C-POLSCI6-2>

Schedule of Lectures and Important Dates

- Week 1: Summaries of Data
 - Lecture 1: (*August 8*) Introduction and logistics of the class, types of social science data, histograms, summaries of central tendency and variability, outliers
 - Lecture 2: (*August 10*) Central tendencies in subsamples, contingency tables, correlation between two variables, graphical summaries of data
- Week 2: Linear Regression as Descriptive Tool
 - Lecture 3: (*August 15*) Fitting a bivariate regression line to the data, interpretation of regression coefficients, regression diagnostics
 - Lecture 4: (*August 17*) Multivariate regression, control variables, coefficient of determination, added-variable plot and other diagnostic instruments
- Week 3: Introduction to Probability and Statistical Inference (I)
 - Lecture 5: (*August 22*) Random variable, probability distributions, Normal distribution. **Quiz 1**
 - Lecture 6: (*August 24*) Difference between population and sample, sampling variability, Central Limit Theorem. **First data analytical essay due**
- Week 4: Introduction to Probability and Statistical Inference (II)
 - Lecture 7: (*August 29*) The logic behind confidence intervals, calculating confidence intervals for difference in means and for regression coefficients. **Quiz 2**
 - Lecture 8: (*August 31*) Hypothesis testing (if you must), p-values, Type 1 and Type 2 errors, statistical power, “statistical significance”
- Week 5: Types of Social Science Questions: Causality and Prediction
 - Lecture 9: (*September 5*) Correlation vs. causation, introduction to potential outcomes framework and causal graphs, Simpson’s paradox, experiments, quasi-experimental research designs. **Quiz 3**
 - Lecture 10: (*September 7*) Predictive analytics, automated variable selection, overfitting, cross-validation. **Second data analytical essay due**
- Week 6: Data Analysis and Critical Thinking
 - Lecture 11: (*September 12*) Recognizing misleading graphs and statements about data in politics and research, p-hacking, reproducibility, publication bias, underpowered studies, importance of replication and pre-analysis plans
 - Lecture 12: (*September 14*) **Final Exam**

Computer Software

In this class, we will be using data analytical software package GRETL (Gnu Regression, Econometrics, and Time Series Library). It is free and open-source. Please download it from this page: <http://gretl.sourceforge.net/> and install on your computer.

Prerequisites

In this class, we will be using practical examples from 2016 US presidential election. So, the general familiarity with the US political system and this particular event will be helpful and will make the class more entertaining for you. If you have not been following US politics or not familiar with the US political system, please read the following articles from Wikipedia:

- https://en.wikipedia.org/wiki/United_States_presidential_election,_2016
- https://en.wikipedia.org/wiki/Swing_state

Components of Evaluation

The final grade for this class will be a weighted average of the grades for the following activities:

- Attendance: 5 percent
- In-class assignments: 5 percent
- Quiz 1: 5 percent
- Quiz 2: 10 percent
- Quiz 3: 15 percent
- First data analytical essay: 15 percent
- Second data analytical essay: 20 percent
- Final exam: 25 percent

Quizzes

In this class, you will be asked to do three in-class quizzes. Each quiz will last 10-15 minutes and will have questions on the material we covered in the previous weeks. Some of the questions will be multiple choice, and some will not.

In-Class Assignments

The class will usually consist of two parts. In the first part, I will be lecturing, and in the second part, I will ask you to perform certain data analytical tasks on your laptops using GRET. For this, please bring laptops to the class. I will help you if you are facing any difficulties in those tasks. The points for in-class assignments will be awarded based on your effort, not on whether you got a particular question right.

Data Analytical Essays

You will be asked to write two data analytical essays. For those essays, I will give you a data set and will ask you to answer several questions. You will need to perform data analytical tasks, produce graphs, and describe the results. The grade for your essay will take into account the quality of your analysis, the quality of your presentation, and the quality of your writing.

Attendance Policy

Attendance is mandatory. If you miss a class without a valid excuse, you lose attendance points and points for in-class assignments for that class. Medical appointments and participation in university-sponsored athletic events are considered valid excuses. If you miss a class because of one of those events, you should bring a note from your doctor or a coach. If you miss a class because of the valid excuse, you should come to my office hours and have a conversation with me about the material for the class you missed.

Late Submission Policy

Data analytical essays are due in class before the start of the lecture. Late submissions will only be allowed in the extraordinary circumstances (like a death in the family). Things like computer crashes, other commitments that happen at the same time are NOT considered extraordinary circumstances. You will usually have two weeks to finish the data analytical essay, so please plan ahead and budget your time.

Grade Dispute Policy

If you disagree with your grade for an assignment, you can request a regrade. To request a regrade, please, within a week after you receive your grade, submit a written regrade request explaining why you think your grade is incorrect (not more than one page). As a result of a regrade, your grade can go up, down, or remain the same

Electronic Devices

Using laptops are only allowed during in-class assignments and not allowed during the lecture. Cell phones and other devices are prohibited. Students who violate this policy will not be counted as present in class.

Email Policy

Please feel free to send me an email if you have any questions (except the questions about your grades, see below). Please include "PS6" in the subject line of your email. I will usually answer within one working day. Please note, that I will not be able to help you with the content of the lecture and with your assignments if you are experiencing serious conceptual issues. In these cases, I will be happy to help you during the office hours.

Emergencies

In an emergency situation, please call UCPD by dialing 911 from an on-campus phone or (310) 825-1491. Anonymous Reporting Line: (310) 794-5824. Sign up for BruinAlert.

Discrimination and Harassment

- Title IX prohibits gender discrimination, 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, 1st Floor Wooden Center West, CAREadvocate@careprogram.ucla.edu, (310) 206-2465.
- You can also report sexual violence or sexual harassment directly to the University's Title IX Coordinator, 2241 Murphy Hall, titleix@conet.ucla.edu, (310) 206-3417.
- Reports to law enforcement can be made to UCPD at (310) 825-1491.
- Please note that under University policy, all TAs and instructors are mandated Title IX reporters. If any of the teaching team is informed of or witnesses sexual violence or harassment, we are required to report this to UCLA's Title IX coordinator. The coordinator is committed to maintaining anonymity of victims.
- UCLA is committed to creating a community free from bias and intolerance. If you have experienced a hostile climate, please file a report at <http://www.deanofstudents.ucla.edu/Report-an-Incident-of-BIAS>

Academic Integrity

Academic integrity is taken seriously at UCLA. The Dean of Students Office is charged with responding when students are accused of committing a violation of policy. <http://www.deanofstudents.ucla.edu/Portals/16/Documents/Syllabus>

Academic Counseling

UCLA Students may contact the College Academic Counseling office for help with any academic concerns via <http://www.ugeduction.ucla.edu/counseling/contact-us.html>. Non-UCLA students should contact <http://www.summer.ucla.edu>

Mental Health

Counseling and Psychological Services (CAPS) at UCLA offers a range of services including individual and group therapy, referrals, psychological testing, crisis consultation, and psychoeducational programs and workshops. CAPS is located at John Wooden Center West and can be reached at (310) 825-0768. Learn more at <http://www.counseling.ucla.edu>.

If you need an immediate response after hours or on weekends please call UCLA CAPS 24-hour access line (310) 825-0768 or call the UCPD 24-hour dispatch line at (310) 825-1491 or dial 911 for your local police.

Accommodations for Students with Disabilities

If you wish to request an accommodation due to a disability, please contact the Center for Accessible Education (formerly called the Office for Students with Disabilities) as soon as possible at A255 Murphy Hall, (310) 825-1501 / TDD: (310) 206--6083. Website: <http://www.cae.ucla.edu/>

Other Questions

For many other summer session questions, go to <http://www.summer.ucla.edu/>, choose “Academic Courses” under the Programs link in the top banner, and then find the category that applies to you on the right side of the page. Click on that, and then on “Important Resources” in the left column of the subsequent page. For questions about deadlines, see <http://www.summer.ucla.edu/academiccourses/UCLAstudent/registrationandenrollment> or www.summer.ucla.edu/calendar.

Discussing Your Grades

Under FERPA, you have a right to know how you’re doing in the course, but it is a violation of university policy to discuss grades or any private information via email, because legally, email is not private communication. Any discussion of your performance in the course, including your grade, must take place in person.

Writing Center

The Student Writing Center offers UCLA Undergraduates one-on-one sessions on their writing. The Center is staffed by peer learning facilitators (PLFs), undergraduates who are trained to help at any stage in the writing process and with writing assignments from across the curriculum. PLFs tailor the appointments to the concerns of each writer. To schedule an appointment, visit <http://www.wp.ucla.edu>. UCLA’s Student Writing Center is located in A61 Humanities. Telephone: 310-206-1320. Email: wcenter@ucla.edu. Hours: Monday to Thursday, 10 am to 6 pm; Friday, 10 am to 3 pm.