

PSCI-3075: Applied Political Science Research

University of Colorado Boulder

Spring 2024

Time: Tuesday and Thursday, 9:30-10:45
Location: EKLC E1B50
Instructor: Dr. Andrew Q. Philips
Office: KTCH 131
Email: andrew.philips@colorado.edu
Office hours: Thursday, 11:00-12:30, or by appointment

COURSE DESCRIPTION: This course is designed to introduce you to the types of research design and quantitative methodology used in applied political science research. This course directly builds on the data analysis performed in Quantitative Research Methods (PSCI 2075). In this class we will cover topics such as building theories, hypothesis testing, measurement, and causation. Some of the class will be spent analyzing, understanding and critiquing the research design of actual political science articles. This course will provide an overview of some of the most popular approaches to social science research, such as multivariate regression and experiments, as well as relatively new approaches. Any statistics and data analysis conducted will utilize the free open-source statistical package R.

By the end of this course you should be able to:

- Understand the major approaches to research design in political science.
- Apply what you have learned to understand, produce and critique research in social science.
- Be a savvy consumer of data and statistics in the news, media, web, etc.

PREREQUISITES: We will use some R and RStudio in this course, which should be familiar to you from PSCI 2075 (the required prerequisite course). Early in the course we will review R.

GRADES: Course grades will be based on the following. Participation, homework and quizzes are worth 20% of the final grade. There will be three tests throughout the semester, the first of which is worth 15%, and the latter two 20%. There will also be a final exam which is worth 25%.

Grade Breakdown

Participation, Homework and Quizzes	20%
Exam I	15%
Exam II	20%
Exam III	20%
Final Exam	25%

The following scale will be used to turn numerical grades into letter ones. Note that I will round up a letter should your grade fall on the number (but on or above 0.5) between two letters (e.g., 89.5 up to 90 rounds up to an A-). Extra credit opportunities are rare but may include attending speaker talks and/or participating in research.

Grade Scale

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

Participation: Participation is an integral component of undergraduate courses. Students are expected to come to every class *having already read the assigned readings for that day*, and should be prepared to discuss them. Some of the course material covers difficult topics, so please stop me if you have any questions.

Homework/Quizzes: To encourage attendance and ensuring students are completing the required readings, several quizzes will be held throughout the semester. Occasionally there will be homework assignments as well.

Exams: There will be three in-class exams held throughout the semester. These are cumulative, but will mostly focus on what we have covered in class recently. Depending on the exam, this might be in-class, take-home, or some combination of both. I will provide study guides before each exam, and will allocate some class time towards answering questions on the class day before the exam.

Final Exam: At the end of the semester there will be a final exam. This will be a multi-part exam where you can choose from a number of possible options to answer. We will discuss this much more later in the semester.

Contact, Office Hours, and TA: My office hours are listed at the top of this syllabus. If there is a schedule conflict, we can also meet by appointment, but you *must email me at least 24 hours in advance*. I encourage you to come by office hours if you need help in the class; this is especially important early in the semester since we build upon what we have learned throughout the course. If you send me an email you can generally expect a response within 24 hours on business days. My email is: andrew.philips@colorado.edu.

While there is no in-class teaching assistant, the Political Science department has an undergraduate Methods Lab Coordinator, Gustavo Perez (gupe2935@colorado.edu). He can assist students needing help in the quantitative courses. His virtual office hours are Monday and Wednesday (9:00-12:00), Tuesday and Thursday (9:00-6:00), and Friday (9:00-11:00). You need to sign up for a meeting in advance; see Canvas for the link.

Attendance and Late Policy: Attendance is a key component of succeeding as an undergraduate. Attendance is mandatory, with the exception of university-excused absences.

Assignments and homework are due on the day specified in class and/or on Canvas. Late assignments will be assessed a 10 point penalty per day (i.e., a paper scoring a 95 would receive an 85 if turned in one day late, 75 if two days,...). Assignments not turned in after 3 days will receive a score of zero.

Required Texts: There are two required texts for this course. Any additional readings will be made

available to you as needed. I will put all additional readings on the Canvas course website. Both books are available to you as an eBook on Canvas under “My Course Materials”.¹

- Kellstedt, Paul and Guy D. Whitten. 2018. *The fundamentals of political science research*. Cambridge University Press. 3rd edition.
- Llaudet, E. and Imai, K., 2022. *Data analysis for social science: a friendly and practical introduction*. Princeton University Press. 1st edition.

Note that it is expected to read the week’s required readings *before* coming to class.

Tentative Schedule: Below is the schedule. Note that this is subject to change (see the “Syllabus Changes” section)

Week 1:

Syllabus and course overview, how do we study politics and review of R

Required Readings:

- *The fundamentals of political science research* (henceforth FPSR), Chapter 1
- *Data analysis for social science: A friendly and practical introduction* (henceforth DASS), Chapter 1

Suggested Readings:

- Phillips, Nathaniel D. 2018. “YaRrr! The pirate’s guide to R.”: <https://bookdown.org/ndphillips/YaRrr/>
- Phillips, Andrew Q. 2023. “R: A brief introduction”

Week 2 and Week 3:

What is a theory, causality and the four causal hurdles, research design and the experimental ideal

Required Readings:

- FPSR Ch. 2, 3, 4
- DASS Ch. 2

Suggested Readings:

- Gerber, Alan S. and Donald P. Green. 2000. “The effects of canvassing, telephone calls, and direct mail on voter turnout: A field experiment.” *American Political Science Review* 94(3): 653-663.

Week 4 and Week 5:

Measurement, sampling and knowing your data

Required Readings:

- FPSR Ch. 3-6
- DASS Ch. 3
- *The Economist*. “Is pregnancy in America much deadlier than in other rich countries?”

Suggested Readings:

¹If you wish to obtain these books some other way, you must opt out on Canvas by Jan 31 or else your student account will be charged.

- Geddes, Barbara. 1991. "How the cases you choose affect the answers you get: Selection bias in comparative politics." *Political Analysis* 2: 131-150.
- Kastellec, Jonathan P. and Eduardo L. Leoni. 2007. "Using graphs instead of tables in political science." *Perspectives on Politics* 5(4):755-771.

EXAM I

Week 6:

Probability theory and statistics

Required Readings:

- FPSR Ch. 7
- DASS Ch. 6

Week 7:

Bivariate hypothesis testing

Required Readings:

- FPSR Ch. 8 and 9
- DASS Ch. 4, 7

Suggested Readings:

- Gelman, Andrew and Hal Stern. 2006. "The difference between 'significant' and 'not significant' is not itself statistically significant." *The American Statistician* 60(4): 328-331.

Week 8:

Confounding and multivariate regression

Required Readings:

- DASS Ch. 5
- FPSR Ch. 10
- *The Wall Street Journal*. "Cannabis and the violent crime surge."

Week 9:

Regression assumptions and regression diagnostics

Required Readings:

- FPSR Ch. 11 (sections 11.4-11.5)
- *The Economist*. "Are results in top journals to be trusted?"

Week 10 and Week 11: (EXAM II HELD DURING WEEK 10)

Cleaning and working with data, and writing a research paper

Required Readings:

- Herrera, Yoshiko and Devesh Kapur. 2007. "Improving data quality: Actors, incentives, and capabilities." *Political Analysis* 15(4): 365-386.
- Carsey, Thomas M. 2020. *Tom's comments: Advice about graduate school, finding a job, reaching tenure in political science and other social sciences, and all of the steps in between.* Chapter 8.
- George Orwell, "Politics and the English Language"
- McCloskey, Donald. 1985. "Economical writing." *Economic Inquiry* 24(2): 187-222.
- *The Economist*. "Signifying nothing?"

Week 12:

Dichotomous, categorical, and interactive variables

Required Readings:

- FPSR Ch. 11 (through section 11.3)
- Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding interaction models: Improving empirical analyses." *Political Analysis* 14: 63-82.

Week 13:

Limited dependent variables

Required Readings:

- FPSR Ch. 12 (sections 12.1-12.2)

Week 14: (EXAM III)

Time series

Required Readings:

- FPSR Ch. 12 (sections 12.3 on)

Recommended Readings:

- You may also want to browse through this free e-book on time series analysis in R: <https://a-little-book-of-r-for-time-series.readthedocs.io/en/latest/index.html>

Week 15:

Policy evaluation and difference-in-differences

Required Readings:

- Cunningham, Scott. *Causal inference: The mixtape*. Skim Ch. 9 (might want to skim Ch. 8 too). Available at: <https://mixtape.scunning.com/>

FINAL EXAM, DATE TBD

SYLLABUS CHANGES

I reserve the right to make changes to the syllabus during the course of the semester as needed, and will make the most updated copy available to you and announce said changes during class.

Last updated: January 22, 2024

UNIVERSITY-MANDATED STATEMENTS

Classroom behavior

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy.

For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

Requirements for infectious disease

Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all applicable campus policies and public health guidelines to reduce the risk of spreading infectious diseases. If public health conditions require, the university may also invoke related requirements for student conduct and disability accommodation that will apply to this class. If you feel ill and think you might have COVID-19 or if you have tested positive for COVID-19, please stay home and follow the guidance of the Centers for Disease Control and Prevention (CDC) for isolation and testing. If you have been in close contact with someone who has COVID-19 but do not have any symptoms and have not tested positive for COVID-19, you do not need to stay home but should follow the guidance of the CDC for masking and testing.

Accommodation for disabilities, temporary medical conditions, and medical isolation

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

If you have a required medical isolation for which you require adjustment, you need to contact me as soon as possible.

Preferred student names and pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology [such as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: honor@colorado.edu, 303-492-5550. Students found responsible for violating the Honor Code will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit Honor Code for more information on the academic integrity policy.

Sexual misconduct, discrimination, harassment and/or related retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault),

intimate partner violence (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and support resources can be found on the OIEC website.

Please know that faculty and graduate instructors must inform OIEC when they are made aware of incidents related to these policies regardless of when or where something occurred. This is to ensure that individuals impacted receive outreach from OIEC about resolution options and support resources. To learn more about reporting and support for a variety of concerns, visit the Don't Ignore It page.

Religious holidays

Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please communicate the need for a religious accommodation in a timely manner. In this class, I will try to accommodate your requests, but you must contact me early in the semester.

See the campus policy regarding religious observances for full details.

Mental health and wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.