

Political Science 281
Data in Politics I: An Introduction
Summer Session II

Course Information

Instructor

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Meeting Times

Lecture: MTWTHF 9:45 AM - 11:15 AM, Online
Office Hours: MTWTHF 11:15 AM to 12:15 PM via Zoom
or by appointment

Course Description

The Information Revolution has dramatically expanded the volume of information we have about the world around us. Social scientific analytical skills are transforming many sectors – business, journalism, law, public policy, health care, and finance, to name but a few – and are more valued now than ever. The broad learning objective for this course is to help students develop the tools they need to be informed participants and active leaders in data-driven sectors. More specifically, the learning objectives are:

1. To increase students' comfort and facility managing data in the R statistical language, with an emphasis on versatile tools such as loops, sampling functions, merging datasets, and ggplot2 data visualization software;
2. To teach basic principles of data description, including standard descriptive plots and statistics; and
3. To develop students' ability to use data to answer important social scientific questions.

Students will leave this class with the competencies they need to conduct basic analysis on many different forms of data, as well as the foundation they need to acquire more advanced skills (such as characterizing uncertainty in data and testing formal hypotheses).

The target audience for this course is undergraduate students with interest in social science (not just Political Science), who want to use quantitative approaches to solve important problems and develop marketable analytical skills. This course is a prerequisite for *Poli 381: Data in Politics II: Frontiers and Application*.

The course fulfills the Quantitative Intensive (QI) requirement in UNC's Making Connections curriculum. It also counts as a course in research methods (required for completing the Political Science Bachelor's degree).

Course Requirements and Evaluation

In-Class Activities (20%): Class time will be divided between lecture and in-class activities. One of the best ways to learn is by doing, especially with statistical software. Active participation and investment in the activities in this class are a crucial component of your success. If you are going to be absent from a class, email me before the start of class. You can make up work for class credit. **In-class work will be due before the start of the next class meeting.**

Assignments (20%): There will be five assignments due as noted in the schedule below. They are weighted equally. Assignments are due on Sakai at 6pm on the days indicated. Late assignments accrue a 10% drop in the grade for each

day it is late until the day the answer key is posted where late assignments will no longer be accepted.

Data Camp (10%): We will be using Data Camp to assist with training in R. The assignments on Data Camp should be completed prior to the start of class.

Final Project (35%):, broken up as follows) The class has a capstone final project for which students working in groups, conduct and present an original data analysis on an existing dataset. This project consists of a proposal (5%), a preliminary analysis (5%), paper (15%) and a presentation (10%). A separate document specifies final project requirements more completely.

Participation (15%): Your participation grade has two components. The first component is preparation for (and actual attendance in) class. For each class meeting, you will give yourself 0 to 3 points, depending on how prepared you are for class and how much you intend to participate. (0 = absent from class; 1 = attended class but did not prepare; 2 = attended class but preparation was partial or rushed; 3 = attended class, prepared with care, and commit to being proactive in asking questions and contributing to discussion.) The semester-long score generated by these reports is advisory to the instructor-assigned participation grade – I can adjust self-reports that are inconsistent with what I see in class – but I take them seriously.

The second component is participation in our class's online Piazza discussion forum. (See Sakai for a link.) On Piazza, you can benefit your participation grade either by posting your own questions or by providing thoughtful answers to other students' questions. (The website keeps track of your activity.) These statistics, too, are advisory to the summary participation grade.

A Note on Attendance: Being in class is critical to your success. This class is very easy to fall behind in as the course is by necessity rather fast-paced. I also acknowledge that there is a global pandemic ongoing during the course of the semester. Accordingly, while attendance to lecture is not necessarily mandatory, active participation in class is nearly 35% of your grade and missing more than two classes can be highly detrimental to your overall grade in the class. If you are experiencing difficulties keeping up, prolonged illness, life complications, please come talk to me early on in the semester.

Note that, the weighting scheme above notwithstanding, all assignments must be submitted. If you have not submitted an assignment, you are at risk of receiving a course grade of I (Incomplete) until it is complete.

Grade Scale: This course has the following grade scale: A = 100 - 93; A- = 93 - 90; B+ = 90 - 87; B = 87 - 83; B- = 83 - 80; C+ = 80 - 77; C = 77 - 73; C- = 73 - 70; D = 70 - 60; F < 60.

Course Materials

The following required book is available in the UNC Bookstore. All other readings are available electronically via the [UNC library e-journals and e-resources databases](#) or on the course Sakai site. If there are additional topics you wish to learn more about, please let me know and I will direct you to additional resources or courses at UNC.

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction*. Princeton: Princeton University Press.¹

In addition, there are software requirements. Students must download and install R, a free statistical program available at , as well as RStudio (also free), which is available at . They also must register for Data Camp (www.datacamp.com),

¹Henceforth 'QSS'

a resource that provides tutorial videos and interactive training modules to help learn programming skills. DataCamp is free for students enrolled in this class. (I will provide you with login information.) Please do not pay for Data Camp access!

Expectations

Technology in Class: Per guidance by the School of Arts and Sciences, this course will be online. This means that you will have to use a computer for the course. It is important for your own education that you ensure that you are using your classtime to engage with the material and not to engage with twitter, instagram, tik tok, etc.

Instructor Communication: I may not be able to answer all email immediately, but will do my best to do so promptly. If you have course related questions that require a detailed response from me (e.g., review questions the night before a test), email is not likely to work. Some of these questions are best suited for Piazza. Come see me during my zoom office hours. If these office hours do not fit with your schedule, I am happy to schedule another time to meet via Zoom.

Cooperation and Academic Integrity: In a class setting, cooperative work has both benefits and pitfalls. Peers learn a lot by explaining things to each other. But it can also be easy to stumble into a passive mindset where you're not really assimilating the concepts. To strike a balance, I will designate some activities and assignments (or parts thereof) as being Cooperative, and others as Individual. It is critical that you attend to this distinction, as completing individual work cooperatively would be a breach of academic integrity.

By its nature, this class has an extra matter we need to address. While discussion with other people is permitted and encouraged for work designated as cooperative, there is a distinction between discussing a problem and copying someone else's work. (Writing computer code is an especially tempting activity for which to copy work.) Students can discuss problem-solving strategies, clarify concepts, and point out mistakes but ultimately each person must generate his or her own path to the solution. In our class, copying and pasting another person's computer code is potentially tantamount to plagiarism. Even for work designated as cooperative, you must write your code individually. Unless I have given you explicit permission for some special reason, do not do it. Copied code is surprisingly easy to detect (there is software designed to detect it). Be assured that if I identify a case of cheating or plagiarism, I will handle it 100% "by the book."

Accommodations: If you need an accomodation for a disability, please let me know. Some aspects of the course and its assignments can be modified to ensure your success. I will work with both you and the Office of Accessibiity Resources and Services to find appropriate accomodations.

Title IX: Acts of discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, stalking, and related retaliation are prohibited at UNC-Chapel Hill. If you have experienced these types of conduct, you are encouraged to report the incident and seek resources on campus or in the community. Please contact the Director of Title IX Compliance / Title IX Coordinator (Adrienne Allison, adrienne.allison@unc.edu), Report and Response Coordinators (Ew Quimbaya-Winship, eqw@unc.edu; Rebecca Gibson, rmgibson@unc.edu; Kathryn Winn kmwinn@unc.edu), Counseling and Psychological Services (CAPs) (confidential) in Campus Health Services at (919) 966-3658, or the Gender Violence Services Coordinators (confidential) (Cassidy Johnson, cassidyjohnson@unc.edu; Holly Lovern, holly.lovern@unc.edu) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Calendar and Class Schedule

Date	Topic	Lecture Readings
The following schedule is tentative. Any changes will be announced well in advance.		
June 22	Greetings and Logistics	Course Syllabus & Assignment Handouts
June 23	The Possibilities and Perils of Data Science	<p>Register for Data Camp and Piazza</p> <p>Tolany, Bill. 2017. "Troubling Evidence of Implicit Racial Bias in MLS Refereeing."</p> <p>Lohr, Steve. 2009. "For Today's Graduate, Just One Word: Statistic."</p>
June 24	R Statistical Software: Getting Set Up	Download and install both R and RStudio
June 25	Basic Tools of R: Part I	DataCamp: Introduction to R, Chapters 1 - 3
June 26	Basic Tools of R: Part II	DataCamp: Introduction to R, Chapters 4 - 6
June 29	Intermediate Tools of R: Part I	DataCamp: Intermediate R, Chapter 1
June 30	Intermediate Tools of R: Part II	DataCamp: Intermediate R, Chapter 2
July 1	Intermediate Tools of R Part III	<p>DataCamp: Intermediate R, Chapter 3</p> <p>Assignment 1 Due</p>
July 2	Getting to Know Your Data	QSS Chapter 1
July 3	No Class	Holiday
July 6	Causality	QSS, pp. 32-48
July 7	Causality	QSS pp. 48-54
July 8	Causality	<p>QSS pp. 54 - 69</p> <p>Assignment 2 Due</p>

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July 9	Workshop on Causality Tools	Broockman, David and Joshua Kalla "Durably reducing transphobia: A field experiment on door-to-door canvassing." LaCour, Michael and Donald P. Green "When contact changes minds: An experiment on transmission of support for gay equality."
July 10	Data Visualization Part I	DataCamp: Intorduction to the Tidyverse, Ch. 1-4
July 13	Data Visualization Part II	Project Proposal Due at 6PM
July 14	Measurement Part I	QSS, pp. 75 - 96
July 15	Measurement Part II	QSS, pp. 96-111 Assignment 3 Due
July 16	Prediction Part I	QSS, pp. 123-139
July 17	Prediction Part II	QSS, pp. 139 - 148
July 20	Prediction Part III	QSS, pp. 148 - 161 Assignment 4 Due
July 21	Project Day	In-class project workshopping
July 22	Project Day	In-class project workshopping Preliminary Analysis Due at 6PM
July 23	Final Day of Class	Final Project Workshopping Assignment 5 Due
July 27	FINAL	8:00 AM - 11:00 AM - Project Presentations Final Papers Due 6PM