POL-UA 850: Introduction to Research Methods in Politics

Fall 2021

Monday & Wednesday, 4:55-6:10 pm EST

Instructor Information

Professor	Email	Office Hours	Location
Hye Young You	hyou@nyu.edu	Tue 2:00-4:00 pm	Office 224, 19 West 4th

Teaching Assistants	Email	Office Hours	Location
Tatsuya Koyama	tkoyama@nyu.edu	Th 1:00-3:00pm	Office 423, 19 West 4th
Kyuwon Lee	kwl313@nyu.edu	W 11:00am-1:00pm	Office 416, 19 West 4th
Massimo Pulejo	mp4953@nyu.edu	Th 11:30am-1:30pm	Office 416, 19 West 4th
Elisa Wirsching	elisa.wirsching@nyu.edu	M 12:00-2:00pm	Office 416, 19 West 4th

Course Description

Does money buy votes and policies? Does an increase in minimum wage reduce employment? How can we measure racial discrimination in job hiring? Why are women paid less than men? Can we rank order members of Congress from the most liberal to most conservative? What drives attitudes toward immigration? These are just a few of the many questions that social scientists are tackling with quantitative data. In the era of big data along with the revolution of information technology, it is critical to learn data analysis and causal reasoning to understand the complex nature of social problems and provide guidance on solutions to firms, governments, and other organizations.

This class introduces students to quantitative social science, focusing on applications to politics. Part of this task is conceptual. We will learn to think systematically about and evaluate research designs. To this end, students will learn how data and theory fit together, and how to measure the quantities we care about. But part of the task is practical too: students will learn a "tool kit" of methods including basic applied statistics and an introduction to statistical software that enable them to conduct research as a quantitative social scientist.

As a purely pragmatic matter, this class is highly recommended for students who plan to write senior theses. The statistical and computing material learned will be very helpful for those undertaking independent research.

Materials

Software

We will use the programming language R within the RStudio integrated development environment. R is free, open source, and available on all major platforms. RStudio (also free) is a graphical interface to R that is widely used to work with the R language. You can install R and RStudio on your own computer and TAs will provide guidance. You can find a numerous set of resources for R on the internet. POL850 students have free access to DataCamp for 6 months and there are

several web-based tutorials including one from DataCamp.

R download: https://www.r-project.org
RStudio download: https://www.rstudio.com
DatatCamp POL850 group page: https://app.datacamp.com/groups/introduction-research-methods-to-politics/dashboard

Texts
The following texts are recommended:

- Imai, Kosuke. 2018. Quantitative Social Science: An Introduction. Princeton, NJ: Princeton University Press. [Denoted QSS below.]

- Agrist, Joshua. 2015. Mastering Metrics. Princeton, NJ: Princeton University Press. [Denoted MM below.]

    - The first chapter (most important for this class) will be posted in NYU Brightspace.

If you would like to use a hard copy, you are encouraged to purchase the book. We won't cover the entire book, but it is a good resource for the semester and later.

Additionally, the link for a textbook-in-progress, Data Analysis for Social Science: A Friendly Introduction [Denoted DSS below], by Kosuke Imai and Elena Llaudet are posted in NYU Brightspace. This text follows QSS but at a less technical level. This is posted for your reference.

Course Requirements and Grading

Attendance and Participation
This course meets on MW from 4:55-6:10 pm EST. In addition, the TAs will give weekly sections that review course material, with a focus on coding and R applications. Sections will be in-person. The section schedule is as follows:

Section	Day	Time (EST)	Location	TA
002	Th	8:00-9:15 am	GCASL 374	Tatsuya Koyama
003	M	2:00-3:15 pm	7E 12st 125	Massimo Pulejo
004	W	9:30-10:45 am	7E 12st 129	Kyuwon Lee
005	Th	9:30-10:45 am	GCASL 274	Elisa Wirsching
006	F	11:00 am-12:15 pm	25W 4th st C-11	Tatsuya Koyama
007	T	8:00-9:15 pm	7E 12st LL33	Massimo Pulejo
008	T	9:30-10:45 am	45W 4th st B06	Kyuwon Lee

Slides from all lectures and sections will be archived on NYU Brightspace so that you can review them when necessary.

Staying current with lecture material is strongly recommended.

Requirements

Course grades will be calculated based on performance on the following assignments and exams:

1. Five Problem Sets (each worth 10% of the course grade): Five problem sets focus on applications of the concepts discussed in class. Many of the problems will require you to do basic data manipulation and analysis in R.

   You may work on the problem sets with your classmates, though each student must write up and submit their answers individually. If you choose to work with classmates, please write the names of any individuals with whom you consulted at the top of your assignment. This disclosure will protect you in the event of any concerns about academic integrity.

   Submission instructions: All problem sets must be submitted remotely via NYU Brightspace by 4 pm EST on the due date. You will be provided a template in RMarkdown for problem sets in NYU Brightspace. If you prefer to use a different text editor or word processor (e.g., Word), you may submit your problem sets in that way. If you do not use RMarkdown, you will need to copy and paste your code into your submission. We strongly encourage you to use RMarkdown for your assignment.

   Late assignments will be penalized by 10 points per day late.

2. Two Midterm Exams (each worth 15% of the course grade): Both midterms will be in-class exams. You may use the lecture slides, your notes, and any assigned readings during the exam (open-book). The midterms will focus on content from Lectures 1-10 and 11-17, respectively. However, some topics are cumulative so earlier material may be relevant.

3. Final Exam (20% of the course grade): The final will be in-class exam during the assigned exam period. You may use the lecture slides, your notes, and any assigned readings during the exam (open-book). The final will be cumulative with particular emphasis on the material from Lectures 18-26.

Academic Integrity

The University is very clear that students' work is expected to be their own, and that plagiarism is not tolerated. The same rules apply here.

- On problem sets:

  - You may consult and/or work with other students in this class, but any work you submit must be your own.
  - If you consult or work with another student, you must list their name at the top of your submission.
  - Do not copy another individual's work or answers.
  - Do not allow another individual to copy your work or answers.

- On midterms and the final exam:

  - You may use all resources from the course including texts, lecture materials and section materials.
  - Do not copy another individual's work or answers.

– Do not allow another individual to copy your work or answers.

Disability Accommodation

Students requesting reasonable accommodations due to a disability are encouraged to register with the Moses Center for Student Accessibility. You can begin the registration process by going to https://bachelor.accessiblelearning.com/NYU/ and completing an online application. Once completed, an Accessibility Specialist will be in contact with you.

Students requiring services are strongly encouraged to register prior to the upcoming semester or as early as possible during the semester to ensure timely implementation of approved accommodations.

Course Schedule

The following is an anticipated schedule for course topics. At present, this schedule is an accurate agenda for the classes this semester. However, changes may become necessary. Students will be informed of changes well in advance. It is your responsibility as a student to keep yourself informed of all such changes and to be aware of exam and homework dates.

Lecture	Day	Date	Topic	Reading	Notes
1	W	9/8	Introduction		
2	M	9/13	Introduction to Causality	QSS 2.3, MM 1	
3	W	9/15	Experiments	MM 1, DSS 2	HW 1 out
4	M	9/20	The Average Treatment Effect	MM1, QSS 2.4	
5	W	9/22	Observational Studies	QSS 2.5, DSS 5	HW1 due at 4 pm
6	M	9/27	Descriptive Statistics	QSS 2.6	
7	W	9/29	Data Visualization	QSS 3.3	HW 2 out
8	M	10/4	Bivariate Statistics	QSS 3.6	
9	W	10/6	Survey Sampling	QSS 3.4, DSS 3	HW 2 due at 4 pm
	M	10/11	Fall Break. No lectures.		
10	T	10/12	Legislative Day. Review Session		
	W	10/13	Midterm #1		
11	M	10/18	Prediction	QSS 4.1, DSS 4	HW 3 out
12	W	10/20	Correlation	QSS 4.2.1-4.2.2	
13	M	10/25	Linear Regression I	QSS 4.2.3-4.2.4	HW 3 due at 4 pm
14	W	10/27	Linear Regression II	QSS 4.2.5-4.2.6	
15	M	11/1	Regression and Experimental Analysis	QSS 4.3	HW 4 out
16	W	11/3	Regression and Causality	MM 3,4,5	
17	M	11/8	Review Session		HW 4 due at 4 pm
	W	11/10	Midterm #2		
18	M	11/15	Introduction to Probability	QSS 6.1-6.2, DSS 6	
19	W	11/17	Random Variables	QSS 6.3	
20	M	11/22	Large Samples	QSS 6.4	
	W	11/24	Thanksgiving Holiday. No Lectures.		
21	M	11/29	Survey Estimation	QSS 7.1, DSS 7	
22	W	12/1	Experimental Estimation	QSS 7.1	HW 5 out
23	M	12/6	Hypothesis Testing I	QSS 7.2	
24	W	12/8	Hypothesis Testing II	QSS 7.2	HW 5 due at 4 pm
25	M	12/13	Uncertainty in Linear Regression	QSS 7.3	
26	W	12/15	Review Session		
	M	12/20	Final Exam		