SPS 311: Research Methods 1

Instructor: Dr. Serkant Adiguzel (serkant.adiguzel@sabanciuniv.edu)
Office Hours: Tuesdays 12:30 pm – 2:30 pm (FASS 2093)

Course Schedule:
Mondays: 9:40 am - 10:30 am (FASS 1001-1001A)
Tuesdays: 8:40 am – 10:30 am (FASS 1001-1001A)

Teaching Assistant: Yasemin Tosun (yasemintosun@sabanciuniv.edu)

Discussion Section:
Wednesdays: 12:40 pm – 1:30 pm (FASS G048)

Course Description and Objectives:
Does inequality cause authoritarianism? How do you estimate religiosity using satellite data? Does automatization cause inequality? How do you predict election outcomes? Does state repression cause protests? What are the factors that drive civil wars? How do you identify social networks from call data? Social scientists are using various methods to answer such questions and more. This course will introduce you to social science research methods and give you the ability to understand and perform such research on your own to answer these questions.

The course will emphasize quantitative data analysis and teach you the necessary data science skills. Over the last two decades, social science research that uses quantitative data has flourished. Similarly, many organizations, such as NGOs, corporations, and governments, use data to make informed decisions and need people with the necessary data skills. Therefore, obtaining such skills is valuable beyond academia. However, the course will also introduce you to other frequently used research methods throughout the semester.

By the end of the course, you will understand most of the methodologies used in social science research and obtain the basic data analysis skills to conduct research.

Prerequisites:

The course is designed with the assumption that students know basic high-school algebra. It does not require any further math knowledge or programming experience.

We will use R in this course for data analysis. It is a free and open-source programming language used by data scientists, mainly for data analysis and visualization. RStudio is an integrated development environment (IDE) for R. You should install both R (https://www.r-project.org) and RStudio (https://www.rstudio.com/products/rstudio/download/) on your computers.

Although R is a simple and intuitive programming language, it can initially have a steep learning curve. Therefore, we will use discussion sessions and office hours to help you learn it. There are also several tutorials online. For instance, you can complete this online tutorial to become acquainted with the basic syntax in R (https://campus.datacamp.com/courses/free-introduction-to-r/).

If you would like to come to my office hours, please use this google sheet before coming: https://bit.ly/3LrphQa. This way, you won't have to wait for your friend in front of the office. Depending on your question, you can sign up for as many 20-minute slots as possible. Please email me ONLY when you cannot sign up for any time slot due to unavailability or your schedule.

Student responsibilities:

- **Reaction points:** You are expected to do weekly assigned readings **before** coming into the class. The required readings will be available on SUCourse. To ensure that we are all keeping up, please post a half page or so of discussion/reaction points and/or questions bearing on the week's reading to the SUCourse by 8 pm before class (i.e., by **Sunday 8 pm**). You can raise questions about the methodology used in the paper, question its assumptions, the validity of its results, etc. You can also compare readings within the same week or develop links across weeks regarding methodologies pursued. It is up to you! All I require is that the points need to be thoughtful, and they do not need to be long. These reaction points will constitute 11% of your total grade.

- **Graded problem sets:** The best way to learn research methodologies is to apply them. Therefore, you will have **four** graded problem sets throughout the semester. Using real-world data, you will be asked to apply the things you learn during the lectures and discussion sessions. You are **encouraged** to work in groups (2-3 people) for these problem sets, but I strongly suggest you try to tackle the questions first and then meet in groups to work on them. You will be expected to submit your own solutions, but we require you to write your collaborators' names for each submission. I will consider the highest three grades out of these four problem sets you submitted, and your lowest grade will be dropped. Therefore, each problem set will constitute 8% of your total grade (24% in total).

- **Exams:** There will be one in-class midterm that will constitute 20% of your total grade (November 15). Similarly, the final exam (Date: TBA) will make another 20% of your total grade.

- **Final group project:** You will need to choose a research topic and specify a clear research question that can be analyzed with quantitative data (administrative data, social media data, survey data, etc.) in a group of 2-3 people. You will be responsible in finding the data. You will analyze the data to answer your research question and write no more than a 5-page report that will be due January 15, 23:59. You will have to write 1-page project proposal in which you talk about your research question and the dataset you will use by November 30 so that I can give you a detailed feedback about your project.

  Please read this useful guideline on writing a research proposal: https://www.une.edu.au/__data/assets/pdf_file/0013/22207/writingaresearchproposal.pdf I suggest you use office hours and discussion sections to make timely progress on the project. The final group project will constitute 25% of your overall grade.

Grade distribution:
Reaction points (11%)
Midterm exam (20%)
Final exam (20%)
Graded problem sets (24%, 8% each)
Final group project (25%)

Textbooks:

Imai, K. (2018). *Quantitative social science: an introduction*. Princeton University Press.

Imai, K., & Williams, N. W. (2022). *Quantitative Social Science: An Introduction in Tidyverse*. Princeton University Press.

Please note that either of the above is fine. The only difference between them is how you use the R language.

Diez, David M., Christopher D. Barr, and Mine Çetinkaya-Rundel. 2015. *Open-Intro Statistics*. 3rd edition (https://www.openintro.org/book/os/) (optional but very useful).

Course Overview:

WEEK 1

1) October 3, 2022 Monday => Introduction: Course logistics

2) October 4, 2022 Tuesday => Introduction to social science research

Discussion Session 1 (October 5, 2022): R and R studio installation + R studio intro

WEEK 2

3) October 10, 2022 Monday => Introduction to R Programming

4) October 11, 2022 Tuesday => Causality: Introduction, RCTs

Discussion Session 2 (October 12, 2022): R Exercise set 1 (Swirl Intro 1 and 2).

Readings:

- Imai Chapter 1.3; Chapters [2.1, 2.4]
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review*, 94(4), 991-1013.

- Gerber, A. S., Green, D. P., & Larimer, C. W. (2008). Social pressure and voter turnout: Evidence from a large-scale field experiment. *American Political Science Review*, 102(1), 33-48.

WEEK 3

5) October 17, 2022 Monday => Causality: Observational Data

6) October 18, 2022 Tuesday => Causality: Observational Data (2)
Discussion Session 3 (October 19, 2022): R Exercise set (Swirl Causality 1 and 2)

Readings:
- Imai Chapters [2.5, 2.6]
- David Card and Alan Krueger (1994) "Minimum wages and employment: A case study of the fast-food industry in New Jersey and Pennsylvania." *American Economic Review*, 84(4), 772–793.
- Malesky, E. J., Nguyen, C. V., & Tran, A. (2014). The impact of recentralization on public services: A difference-in-differences analysis of the abolition of elected councils in Vietnam. *American Political Science Review*, 108(1), 144-168.

WEEK 4

7) October 24, 2022 Monday => Measurement: Descriptive statistics

8) October 25, 2022 Tuesday => Measurement: Descriptive statistics continued, Survey sampling

Discussion Session 4 (October 26, 2022). Summarizing bivariate relationships in R. Please do Swirl Measurement 1 and 2 as homework.

Readings:
- Imai Chapters [3.1, 3.6]
- Lyall, J., Blair, G., & Imai, K. (2013). Explaining support for combatants during wartime: A survey experiment in Afghanistan. *American Political Science Review*, 107(4), 679-705.
- Blair, G., Imai, K., & Lyall, J. (2014). Comparing and combining list and endorsement experiments: Evidence from Afghanistan. *American Journal of Political Science*, 58(4), 1043-1063.

WEEK 5 [Problem Set 1 DUE: October 31, before class].

9) October 31, 2022 Monday => Prediction: Introduction

10) November 1, 2022 Tuesday => Prediction: Linear regression (1)

Discussion Session 5 (November 2, 2022). Loops, conditional statements, merging datasets, linear regression.
Please do Swirl Prediction 1 and 2 as homework.

Readings:

- Imai Chapters [4.1, 4.3.2]
- Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. C. (2005). Inferences of competence from faces predict election outcomes. *Science*, 308(5728), 1623-1626.
- Mueller, H., & Rauh, C. (2018). Reading between the lines: Prediction of political violence using newspaper text. *American Political Science Review*, 112(2), 358-375.

WEEK 6

11) November 7, 2022 Monday => Prediction: Linear regression (2)

12) November 8, 2022 Tuesday => Prediction: Linear regression (3)

Discussion Session 6 (November 9, 2022). Linear regression and RDD applications in R.
Please do Swirl Prediction 3 as homework.

Readings:

- Imai Chapters [4.3.2, 4.5]
- Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica*, 72(5), 1409-1443.
- Eggers, A. C., & Hainmueller, J. (2009). MPs for sale? Returns to office in postwar British politics. *American Political Science Review*, 103(4), 513-533.

WEEK 7

13) November 14, 2022 Monday: Review Session

14) November 15, 2022 Tuesday: MIDTERM EXAM

Discussion Session 7 (November 16, 2022): Midterm exam session

WEEK 8

15) November 21, 2022 Monday => Probability: Introduction

16) November 22, 2022 Tuesday => Probability (2)

Discussion Session 8 (November 23, 2022): Probability review session using R (probability, permutation, combination, etc.)
Please do Swirl Probability 1 as homework.

Readings:

- Imai Chapters [6.1, 6.3]

WEEK 9 [PS2 DUE: November 29, before class; Group Project Proposal DUE: November 30]

17) November 28, 2022 Monday => Probability (3) and Uncertainty: Introduction

18) November 29, 2022 Tuesday => Uncertainty (2)

Discussion Session 9 (November 30, 2022): Hypothesis testing in R
Please do Swirl Probability 2, Uncertainty 1 and Uncertainty 2 as homework.

Readings:

- Imai Chapters [6,4] and [7.1, 7.2]
- Adiguzel, F.S., Cansunar A., Corekcioglu G. (Forthcoming). Out of Sight, Out of Mind? Electoral Responses to the Proximity of Health Care, *Journal of Politics*
- Foos, F., & Bischof, D. (2022). Tabloid media campaigns and public opinion: Quasi-experimental evidence on Euroscepticism in England. *American Political Science Review*, 116(1), 19-37.

WEEK 10

19) December 5, 2022 Monday => Uncertainty (3)

20) December 6, 2022 Tuesday => Uncertainty (4)

Discussion Session 10 (December 7, 2022): Linear regression model revisited in R.
Please do Swirl Uncertainty 3 as homework.

Readings:

- Imai Chapters [7.3, 7.5]
- Franco, A., Malhotra, N., & Simonovits, G. (2015). Underreporting in political science survey experiments: Comparing questionnaires to published results. *Political Analysis*, 23(2), 306-312.
- Wang, Y. (2022). Blood is Thicker Than Water: Elite Kinship Networks and State Building in Imperial China. *American Political Science Review*, 1-15.

WEEK 11

21) December 12, 2022 Monday => Uncertainty (5)

22) December 13, 2022 Tuesday => Formal Modeling: Introduction

Discussion Session 11 (December 14, 2022): Linear regression model in R (2).

Readings:

- Svolik, M. W. (2020). When Polarization Trumps Civic Virtue: Partisan Conflict and the Subversion of Democracy by Incumbents. *Quarterly Journal of Political Science*, 15(1), 3-31.
- Ansell, B., & Samuels, D. (2010). Inequality and democratization: A contractarian approach. *Comparative Political Studies*, 43(12), 1543-1574.

WEEK 12 [Problem Set 3 DUE: December 19, before class]

23) December 19, 2022 Monday => Formal Modeling: Game theory

24) December 20, 2022 Tuesday => Formal Modeling: Game theory (2)

Readings:

- Geddes, B. (1991). A game theoretic model of reform in Latin American democracies. *American Political Science Review*, 85(2), 371-392.
- Osborne, M. J. (2004). *An introduction to game theory*. Oxford university press, Chapters 1 and 2

Discussion Session 12 (December 21, 2022): Formal modeling examples

WEEK 13

25) December 26, 2022 Monday => Intro: Qualitative Research

26) December 27, 2022 Tuesday => Case study and ethnographic research

Readings:

- Holland, A. C. (2016). Forbearance. *American Political Science Review*, 110(2), 232-246.
- Singh, P., & Vom Hau, M. (2016). Ethnicity in time: Politics, history, and the relationship between ethnic diversity and public goods provision. *Comparative Political Studies*, 49(10), 1303-1340.

Discussion Session 13 (December 28, 2022): Review Session

WEEK 14 [Problem Set 4 DUE: January 4, before the discussion session]

27) January 2, 2023 Monday => Multi-method research

28) January 3, 2023 Tuesday => Review Session

Discussion Session 14 (January 4, 2022): Review Session

Readings:

- Hager, A., & Krakowski, K. (2022). Does state repression spark protests? evidence from secret police surveillance in communist Poland. *American Political Science Review*, 116(2), 564-579.
- Fearon, J. D., & Laitin, D. D. (2008). Integrating qualitative and quantitative methods in *The Oxford handbook of political methodology*, Box-Steffensmeier, J. M., Brady, H. E., & Collier, D. (Eds.)

Week 1	3-Oct-22	Introduction: Course logistics	**PS1 Available**
	4-Oct-22	Introduction to social science research	
	5-Oct-22	Discussion: R and R studio installation + R studio intro	
Week 2	10-Oct-22	Introduction to R Programming	
	11-Oct-22	Causality: Introduction & RCTs	
	12-Oct-22	Discussion Session: R exercises	
Week 3	17-Oct-22	Causality: Observational Data	**PS1 Due**
	18-Oct-22	Causality: Observational Data (2)	
	19-Oct-22	Discussion: R exercises	
Week 4	24-Oct-22	Measurement: Descriptive statistics	
	25-Oct-22	Measurement: Descriptive statistics (2), Survey sampling	
	26-Oct-22	Discussion: Summarizing bivariate relationships in R	
Week 5	31-Oct-22	Prediction: Introduction	
	1-Nov-22	Prediction: Linear regression (1)	
	2-Nov-22	Discussion: Loops, conditional statements, merging datasets, linear regression.	
Week 6	7-Nov-22	Prediction: Linear regression (2)	**PS 2 Available**
	8-Nov-22	Prediction: Linear regression (3)	

	9-Nov-22	Discussion: Linear regression and RDD applications in R.	
Week 7	14-Nov-22	Review Session	
	15-Nov-22	MIDTERM EXAM	
	16-Nov-22	Discussion: Midterm exam session	
Week 8	21-Nov-22	Probability: Introduction	
	22-Nov-22	Probability (2)	
	23-Nov-22	Discussion: Probability review session using R	
Week 9	28-Nov-22	Probability (3) and Uncertainty: Introduction	
	29-Nov-22	Uncertainty (2)	**PS 2 DUE / PS 3 Available**
	30-Nov-22	Discussion: Hypothesis testing in R	**Group Project Proposal DUE**
Week 10	5-Dec-22	Uncertainty (3)	
	6-Dec-22	Uncertainty (4)	
	7-Dec-22	Discussion: Linear regression model revisited in R.	
Week 11	12-Dec-22	Uncertainty (5)	
	13-Dec-22	Formal Modeling: Introduction	
	14-Dec-22	Discussion: Linear regression model in R (2)	
Week 12	19-Dec-22	Formal Modeling: Game theory	**PS3 DUE / PS 4 Available**
	20-Dec-22	Formal Modeling: Game theory (2)	
	21-Dec-22	Discussion: Formal modeling examples	
Week 13	26-Dec-22	Introduction: Qualitative Research	
	27-Dec-22	Case study and ethnographic research	
	28-Dec-22	Discussion: Qualitative research	

Week 14	2-Jan-22	Multi-method research	
	3-Jan-22	Review Session	
	4-Jan-22	Discussion: Review Session	**PS4 Due**
	15-Jan-22		**Group Project DUE**