

# **POLI 395: Applied Research Methods**

Class: Tuesday/Thursday, 1:00 – 2:15 PM

Lab: Thursday, 7:00 – 7:50 PM

Location: SEW 101

Spring 2023

## **Contact Information**

Instructor: Dr. Joseph Cozza (*He/Him*)

Office: 115 Herzstein Hall

Email: [Joseph.Cozza@rice.edu](mailto:Joseph.Cozza@rice.edu)

Office Hours: Tuesday 2:30 – 4:00 and Wednesday 1:30 – 3:00

Lab instructor: Gustavo Guajardo ([gguardo@rice.edu](mailto:gguardo@rice.edu))

Office Hours: Wednesday 1:00 – 3:00 PM

## **Course Objectives and Learning Outcomes**

This course introduces students to basic ideas in social science research design, and the application of these ideas to substantive questions in political science. This course will require students to work in groups to generate an original research question, develop theories to address this question, and design and implement an experiment to test novel hypotheses. I will work with you in helping your group focus on an appropriate political science topic. As you will find, especially from the readings, it is difficult to separate political science from the social sciences writ large. The only thing that will hold you back is a lack of imagination.

By the end of this course students will be able to:

1. Understand basic approaches to the scientific study of the social world to substantive topics in political science.
2. Have a basic understanding of how to write and execute a survey.
3. Execute and interpret statistical analysis of quantitative political data to answer substantive questions in political science.
4. Recognize and understand threats to inference based on empirical data in political science, including the weaknesses of research designs and statistical analyses.

## Class, Grades, and Assignments

There are two features of this course that make it unusual. First, this course will be organized and run as a *research workshop* rather than as a typical lecture-exam course or even a reading-discussion course (e.g., a freshman seminar). As such, the main activity that we will be engaged in is crafting a set of empirical research projects. You will work on these projects in groups and each group will produce a short research note and a research poster (that will be presented at a symposium at the end of the semester).

The paper and poster will:

1. Describe and motivate a research question.
2. Describe (and motivate) a plausible theory (or theories) that might answer it.
3. Describe a set of causal hypotheses that follow from the theory.
4. Describe a research design that can be used to test these causal hypotheses, including a causal identification strategy and an empirical identification strategy.
5. Assess the strengths and weaknesses of the research design and detail threats to the key causal inferences.
6. Collect and analyze the empirical data resulting from the research design and come to (and communicate) conclusions about the veracity of the hypotheses and the implications of this for the usefulness of the theory and ultimately the answer to the research question.

A second unusual feature of this course is that we will be collecting our own data rather than using “canned” data generated by others. Specifically, we have obtained funding to allow us to collectively conduct (with the help of a survey research firm) a survey of a representative sample of U.S. adults. Each of our research groups will have a fixed amount of survey time to ask questions (or have respondents do other kinds of tasks) that will allow them to test empirical hypotheses derived from theories that address their research questions. In my view we can maximize the usefulness of this research experience by allowing you to collect your own data and craft survey questions that fit the needs of the project, rather than changing the project to fit existing data (usually collected for other purposes).

That said, reliance on survey data can be somewhat limiting (e.g., it’s unlikely to be useful for studying the influence of the personal background of supreme court justices on their judicial opinions). However, with some creativity, we should be able to find ways to use it to speak to many of the questions in which you are interested. Further, crafting and implementing surveys is the form of data collection that you are most likely to do later in life if you pursue a career in politics, industry, or government.

The workshop format of the course and our reliance on survey data means that we will need to be flexible in terms of the substantive content of the course. While we will all learn the basics of experimental design, survey experiments, observational research designs (i.e., when we can’t do experiments), writing good survey questions, and basic techniques in data visualization and analysis, other topics we will cover will depend on the specific projects you choose. For example, it is possible that some groups will choose projects in which you need to ask respondents sensitive questions (e.g., about racial bias, or anti-democratic attitudes) about which we should expect people to lie. There is a whole literature in survey methodology that explores how to get people to

tell you the truth on surveys in such situations. So, I will lecture about these topics (and we will do some corresponding exercises) as it becomes clear that we need them.

### **Group meetings outside of Class**

Because the projects will be done in groups, it is essential that you meet regularly with your groups outside of class. At a minimum, I will suggest that your group meet at least once per week at a designated, regular time (that you will choose with your other group members). Each group should also have the ability to meet online at any time, to make it easy for students who may not be feeling well to not feel pressured to attend in person.

### **Grade Policies**

Overall course grades are assigned according to the following scale:

93.0% - 100%	A	77.0% - 79.9%	C+
90.0% - 92.9%	A-	73.0% - 76.9%	C
87.0% - 89.9%	B+	70.0% - 72.9%	C-
83.0% - 86.9%	B	60.0% - 69.9%	D
80.0% - 82.9%	B-	0% - 59.9%	F

Final course grades are calculated based on a percentage rounded to the nearest tenth of a percent. For example, a final score of 92.95 is rounded to 93.0 and is an A, while an 82.91 is rounded to 82.9 and is a B-. This grading policy is not subject to appeal.

### **Specific graded Activities:**

- R lab exercises: 20%
- Individual and group assignments: 25%
- Group paper: 25%
- Group poster: 15%
- Participation: 15%

### **Exams**

There are no exams in this class. 1<sup>st</sup> drafts of papers will be due around April 6 and final papers on April 20. Posters will be presented at a symposium that will be attended by the political science faculty and graduate students. This will occur at the end of the semester at a time to be announced later (we will try to coordinate the presentations with any from other classes and those doing honors theses).

### **Attendance**

Because so much of the work on our projects will be done in class, attendance in class meetings and labs is essential. Class time will be spent both on class discussions and group projects. Class time will also provide you with an opportunity to ask questions concerning readings, projects, etc.

Students' participation is vital to this course, and it is impossible to participate if you are not in attendance. I would encourage you to contact me should any circumstances arise that may preclude you from attending. If attendance is persistently low, I reserve the right to make attending class sessions mandatory (including virtual attendance).

**If you are feeling sick:** If you have been exposed to Covid, or are feeling sick at all, you should not attend any in-person class, lab, or research group meeting. You should participate virtually if you feel well enough, but I must know in advance so I can plan for dual delivery. If you are too sick to participate virtually, then you should seek an excused absence (by providing me with advanced notice and documentation as described above). However, if you can participate virtually, you should do that (and it will be counted as full participation).

## R lab exercises

There is a one-hour R lab each week. That lab will be staffed by Gustavo Guajardo, a graduate student who will help you learn R through lab assignments. Each lab will have an exercise that will be graded. You are expected to watch a video on Canvas each week before the lab. During the lab, you may work with your colleagues in completing the exercises, and you are also encouraged to seek out the answers on the internet. However, you must turn in your own work. Each character and number in your code should be typed by you and adapted for your case. Lab exercises are due at 12 PM on Friday following the lab. The answer key will be posted on the weekend, along with the lab for the following week. Late assignments will lose 10% of the grade every 24 hours.

## Group homework and exercises

The second week of the semester, you will select into a research group. The group will focus on a specific research question and over the course of the semester you will learn how to answer your group's question. Throughout the semester there will be group assignments and exercises designed to teach you aspects of research design and to advance the project. You should expect an assignment each week, usually directly related to your project but sometimes including other relevant material.

## Group paper (Research Note)

By **April 4**, your group will provide a draft of a written research note describing your research Project and the results. I will provide feedback on that draft, and you will have a chance to revise before the end of the semester. In addition, many of the exercises mentioned in the last section will require you to write drafts of sections of this research note, so you will have a great deal of feedback throughout the semester.

## Group poster

At the end of the semester (I hope during the last week) your group will present a poster detailing your group's project. After completing the draft of your research notes, you will learn the basics of turning that note into a scientific poster and will be present your poster at our symposium.

## Grading Group Work

I will assign a single grade to all group members for work done during the semester (i.e., the weekly assignments). I will also keep track of which group members speak for the group in class (i.e., who does the many in class presentations that we will do and who answers my questions about the projects). In addition, at the end of the semester, I will ask you to discuss the role that each of your teammates played in producing the research. I will also ask you to grade the overall performance of your teammates along several dimensions. I will take all this information into consideration when assigning individual grades to the members of your group at the end of the semester.

## Participation

Class participation is different from attendance. During discussion sessions students are encouraged to raise questions and relevant topics in class and are expected to contribute to class discussions regarding the readings and course material. I expect a high level of engagement with the material: take notes, write down your impressions or questions, talk with your classmates, bring examples from other classes, etc. Your participation is important not only to evaluate that engagement, but also to enrich the discussion and learning experience of your classmates. This means you must demonstrate a willingness to 1) answer questions I pose in class, 2) pose your own questions when you have them, and 3) engage in discussions we hold during class.

Participation grades are a combination of both a group-based evaluation (how much did the group collectively participate in class discussions/exercises?) and students' evaluations of their group members.

## Grade Appeals

Following the return of graded work, a student must wait **three (3)** days before contacting me about an appeal. After the three-day waiting period, a student has **eleven (11)** business days after the return of graded work (MTWRF) to appeal a grade. Appeals must be made in writing (via email is fine) and provide evidence for the change. In total, the appeal time frame is **fourteen (14)** days from the day the graded work is returned. For example, if an exam is returned on Wednesday, appeals may not be submitted until Tuesday of the following week. Between Tuesday after the exam is returned and the following Tuesday, appeals are accepted. On Wednesday, two weeks after the exam is returned, appeals are no longer accepted. I am always happy to discuss graded work with students at any point during the semester, even after an appeal period has passed.

## Course Communication

Course materials, including all readings outside of the course textbook, will be posted on the course Canvas page. All important course communication outside of class time will be posted as an announcement on the class Canvas page. I do not anticipate using this feature frequently, but I would encourage you to check the Canvas page daily or change your Canvas settings to email you when an announcement is posted. You will also use Canvas to submit the short paper and the blog post assignments.

*Office Hours:* Office hours are your time and will be held Tuesday, 2:30 – 4:00 and Wednesday, 1:30 – 3:00. You are welcome to stop by to discuss course material, current events, or simply talk politics. If you need to arrange a meeting outside my office hours, please email me with suggested times. I will do my best to accommodate these requests, but they should only be used in circumstances where attendance to my normal office hours is impossible.

*Email:* The easiest way to contact me outside of office hours is via email. I will only respond to emails during normal business hours (8-6pm, M-F) and will be sure to respond within 24 hours.

## Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at <http://honor.rice.edu/honor-system-handbook/>. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

## Disability Resource Center

If you have a documented disability or other condition that may affect your academic performance you should: 1) make sure this documentation is on file with the Disability Resource Center (Allen Center, Room 111 / [adarice@rice.edu](mailto:adarice@rice.edu)) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

## Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.

## Required and Recommended Texts and Materials

There are two required texts for this course, one of which is available for free online.

### Required Texts:

1. Toshkov, Dimiter. 2016. *Research Design in Political Science*. Palgrave Mcmillan.
2. Golemund, Garrett and Hadley Wickham. 2017. *R for Data Science*. O'Reilly. Available [here](#).

**Recommended Text:** Robinson and Firth. *Designing Quality Survey Questions*, 1<sup>st</sup> Edition

## Software

For data analysis and visualization, we will rely primarily on the program **R** and a Graphical User Interface (GUI) for R, called **RStudio**. R and R Studio are open source, free programs. I may also sometimes use other statistical packages for examples in class, but R (running through RStudio) is the only program that you will need to use.

For survey building, we will rely on the program *Qualtrics*, which is a program to which Rice subscribe. As a student, you can sign up for a Qualtrics account at <https://oie.rice.edu/qualtrics-surveys>. You will need to use your Rice email to sign up and that will allow us all to share draft surveys with each other.

I recommend that before you install R or RStudio you:

1. Update your operating system and then avoid doing it again during the semester

Or...

2. If you don't want to update your operating system now, you should wait until the end of the semester to update your operating system. Similarly, you should stick with the same version of R that you originally install. Sometimes things that work perfectly with one OS version suddenly stop working under others. Therefore, to make this road smoother, try to stick to one version of your OS and R throughout the semester.

You will need to install R on your own computer. R is free and available for Windows, Macintosh, and most distributions of Linux from <http://cran.r-project.org/>.

RStudio is also free and available for Windows and Macintosh at <http://www.rstudio.com>. R is the actual software and RStudio is a GUI or interface that will make the interaction with R much easier.

Download and install R first and then RStudio. It should not be troublesome, but if you are struggling with the installation, I strongly recommend looking for a tutorial online ideally published within the last year (this is a nice example for Mac users: <http://brunalab.org/las6292/2019/01/23/installing-r-and-rstudio/>).

All students must have a valid Rice e-mail address and login (and access to Canvas) to participate in this course.

## Course Schedule

### Week 1: Course Introduction

#### **Tuesday, January 10**

POLI 395 Syllabus

#### **Thursday, January 12**

Kelstedt and Witten, "The Scientific Study of Politics"

Blake et al, "Institutional Rules, Social Capital, and Constitutional Amendment Rates"

#### **Thursday, January 12 – Lab: Basics of RStudio**

Grolemund and Wickham, Chapter 4

## Week 2: Empirical Research and Developing Research Questions

### Tuesday, January 17

Toshkov Chapter 1, pp. 44 – 55

Gustafsson, Karl and Linus Hagstro. 2018. “What is the Point? Teaching Graduate Students How to Construct Political Science Research Puzzles”

*Suggested reading:* Trochim and Donnely, Chapter 1 (Canvas)

### Thursday, January 19

Question Workshop

### Thursday, January 19 - Lab: R and Data Exploration

Grolemund and Wickham, Chapters 9-11

## Week 3: Intro to Experiments in the Social Sciences

### Tuesday, January 24

Toshkov Chapter 6, pp. 166 – 186

Druckman et al, “The Growth and Development of Experimental Research in Political Science”

### Thursday, January 26

Cozza et al, “Reverse Mortgages and Aircraft Parts: The Arcane Referendum and the Limits of Citizen Competence”

Bansak et al, “Using Conjoint Experiments to Analyze Election Outcomes”

#### *Additional Recommendations:*

Falcó-Gimeno and Muñoz, “Show Me Your Friends: A Survey Experiment on the Effect of Coalition Signals”

Cozza, “Trust the Process? Procedural Legitimacy and Democratic Decision-Making in Constitutional Change”

### Thursday, January 26 – Lab: R graphics

Grolemund and Wickham, Chapter 3

## Week 4: Literature Review and Theory Development

### Tuesday, January 31

Toshkov, Chapter 3, pp. 56 – 67, 77 – 82

Knopf, Jeffrey. 2006. “Doing a Literature Review”

### Thursday, February 2

Weiss, “What is Youth Political Participation? Literature Review on Youth Political Participation and Political Attitudes”

**Thursday, February 2 – Lab: R and Data Transformation**  
Grolemund and Wickham, Chapter 5

## **Week 5: Theory and Hypotheses**

**Tuesday, February 7**

Winter et al, “Conspiracy and distrust of science predicts reluctance of vaccine uptake of politically right-wing citizens”

**Thursday, February 9 - NO CLASS**

## **Week 6: Conceptualization and Measurement**

**Tuesday, February 14**

Toshkov, Chapter 4, pp. 81 – 102  
Sartori, “Concept Misinformation in Comparative Politics”

**Thursday, February 16**

Toshkov Chapter 5, pp. 107 – 116  
Elkins, “Gradations of Democracy? Empirical Tests of Alternative Conceptualizations”

**Thursday, February 16 – Lab: Catchup and basics**

Grolemund and Wickham, Chapter 12

## **Week 7: Causality and Question Writing**

**Tuesday, February 21**

Toshkov, Chapter 6, pp. 145 – 165  
Cozza and Somer-Topcu, “Membership Vote for Party Leadership Changes: Electoral Effects and the Causal Mechanisms Behind”

**Thursday, February 23**

Pew, “Writing Survey Questions”  
Fisher, “Great survey questions: How to write them & avoid common mistakes”

**Thursday, February 23 – Lab: R and putting together your data**

Grolemund and Wickham, Chapters 13 – 15

## **Week 8: Survey Design**

**Tuesday, February 28**

Rosenfeld et al, “An Empirical Validation Study of Popular Survey Methodologies for Sensitive Questions”  
Gains et al, “The Logic of the Survey Experiment Reexamined”

**Thursday, March 2**  
Qualtrics Workshop

**Thursday, March 2 – Lab: R and creating Measures**  
Grolemund and Wickham, Chapters 15 – 16

### **Week 9: Survey Design and Catch-Up**

**Tuesday, March 7**  
Catch-up/workshop, no reading

**Thursday, March 9**  
Workshop, no reading

**Thursday, March 9 – Lab: R and completed data frame**

**Tuesday, March 14 - Thursday, March 16: Spring Break, No Class**

### **Week 10: TBA**

**Tuesday, March 21**

**Thursday, March 23**

**Thursday, March 23 – Lab: Planning your analysis**

### **Week 11: TBA**

**Tuesday, March 28**

**Thursday, March 30**

**Thursday, March 30 – Lab: Carrying out your analysis**

### **Week 12: TBA**

**Tuesday, April 4**

**Thursday, April 6**

**Thursday, April 6 – Lab: Developing your poster**

### **Week 13: TBA**

**Tuesday, April 11**

**Thursday, April 13 – NO CLASS**

**Thursday, April 13 – Lab: Finalizing your poster**

### **Week 14: TBA**

**Tuesday, April 18**

**Thursday, April 20**