# POLI 100X: Quantitative Analysis of Congressional Politics

University of California San Diego | Spring 2021 | Tuesday & Thursday, 9:30-10:50am
Recurring Zoom link: [redacted] (requires UCSD authentication to join)
Updated March 29, 2021


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## Course Description

This class examines congressional politics from an advanced, computational point of view. Through in-class work and hands-on assignments, we will use data science tools (and the R programming language) to collect, analyze, and visualize data related to various stages of the congressional process. Students will develop statistical and computational skills that will assist them in analyzing elections, congressional voting behavior, lobbying, and other dynamics of the lawmaking process in Congress.

## Prerequisite

The prerequisite for this course is POLI 5(D)/ECON 5 or POLI 30(D).

## Zoom Information and Class Attendance

This course will be taught remotely and is designed to accommodate both synchronous and asynchronous students. Attendance will not be taken in any class, but synchronous students are encouraged to attend the live classes in order to ask questions in real time. A complete course calendar can be found at the end of this page. Class meetings will include two different types; the course calendar specifies what type each class will be:

1. **Live Lectures (synchronously offered, recorded for asynchronous students)**.

   Most classes on Tuesdays are live classes that are delivered as lectures. The live lectures will be recorded and available on Canvas afterwards. Lectures will teach both how to apply empirical methods (to be used in Thursday lab-based classes) and substantive topics.

2. **Lab-Based Classes (synchronously offered, recorded for asynchronous students)**.

   Thursdays are live classes that will follow an in-class "lab" with R programming exercises, on the methods that were introduced in the Tuesday lectures. These will be interactive hands-on classes where you will be led through data analysis exercises on various topics in congressional politics, mirroring the substantive topics and empirical skills that are taught in the lectures.

   Each lab will have an accompanying (ungraded) outline of the questions that I will be posing in the class, and designed such that students will be able to follow along with me at the same time as we complete the exercises on the outline together. The outlines will not be collected and are provided as-is for your own optional use; students are strongly encouraged to use the outlines as they follow along in class to ease note-taking and to facilitate their own learning in the course.

   Two things to note about the lab-based classes:

   - The empirical skills used in Thursday labs are first introduced and taught in Tuesday lectures. Thursday labs will not repeat the instruction in Tuesday lectures – we will be jumping right in based on what was covered in the Tuesday lectures.
   - While attendance is not mandatory, live attendance is strongly encouraged, especially for students who find the quantitative part of the course difficult. Previous students have found that live attendance greatly eases the learning of coding skills. The teaching assistant will be on hand during the live lab-based classes to answer/troubleshoot in real-time any coding issues that students may encounter during the lab – previous students have found it extremely beneficial to be able to ask for and receive help **during class as we are working through the examples together**, as opposed to after the fact. Keeping up with the lab outlines and using them for your own learning will be beneficial for class assignments and exam problems.

## Textbooks

The following book is required (print or e-book version).

- Imai, Kosuke. 2018. *Quantitative Social Science: An Introduction.* Princeton University Press.

It is crucial that you get the exact version of the textbook above; your textbook title should match exactly and the textbook should be based in R programming. Take special note because there is now another version of this book available that is based in Stata instead (the title of the incorrect version will also include "An Introduction in Stata"), which is the INCORRECT version of the textbook and will not help you in our R-based course.

Any other required readings will be posted on the course website.

## Course Requirements and Grading

Late Policy: Late assignments will be deducted one full letter grade each day it is late, and can not be accepted after solutions are posted. (For example, if submitted any time after a 11:59PM deadline up to

11:59PM the next day, you will receive a one letter grade deduction.) Solutions will be posted three days after each deadline in order to provide prompt learning materials for the class, while allowing a buffer for any late submissions. After solutions are posted, no late submissions for that assignment can be accepted.

1. **Problem Sets** (50%): There will be three take-home problem sets. Each problem set will be distributed with plenty of time before the deadline, and students are heavily encouraged not to leave the problem set until the last minute. Problem sets will include conceptual questions and coding exercises that are based off of in-class examples.
2. **Research Exercise** (30%): There will be a group research exercise in the second half of the quarter (students may opt-out of the group setting to work individually) in which you will put your data analysis skills to practice by designing and implementing an analysis that answers a research question of your choosing (more details below, and further instructions will be distributed in class).
3. **Final Exam** (20%): The final exam will be cumulative and held on the date assigned by the university (June 8). It is a "take-home," open-note, open-book exam that will be administered on Canvas at the time of the student's choosing on Tuesday June 8.

## Research Exercise

The research exercise is a group project that engages the skills acquired in the class by asking you to take the empirical skills and substantive knowledge learned and apply them to the analysis of a politically relevant dataset. Students will be given the choice of who to work with (up to 3 students maximum), or the teaching team can set up groups for those looking for a partner(s). *While this is intended to be done as a group project, a student may opt-out of the group setting and complete the research exercise individually – for students choosing this route, please be aware of the rules in the "Academic Integrity and Collaboration Policy" section.*

Each group (or individual student if working individually) will choose one of the two final exercise prompts provided, develop their own research question(s) within the given prompts, and use the provided datasets to conduct their analysis and interpret their results. Your analysis will include (1) data exploration, (2) descriptive analysis, and (3) attempts to make more causal inferences. We will be practicing these skills in class so that you are prepared to apply them in your research exercise.

A research exercise proposal is due on Friday March 21, where you will respond to questions that will help you outline your analysis plan. In addition to this outline, groups will answer questions about the expected, balanced contributions from each group member. After the in-class presentations, every student in a group will be required to complete a confidential survey on group member contributions (if a group member is found to have unfairly or under contributed, that member's grade is subject to deduction).

The timeline for the Research Exercise is:

- Friday May 14: Group membership (or opt-out, to work individually) due, as part of Problem Set 3
- Friday May 21: Proposal due
- Classes on May 25 and May 27: Open classes for research exercise work
- Friday May 28: Report and presentation slides due
- Tuesday June 1: In-class presentations (or asynchronous presentation due by 9:30AM Pacific)
- Thursday June 3: Confidential group member contribution survey due

More information will be distributed on in-class; please refer to the Research Exercise handout for detailed guidelines.

## Academic Integrity and Collaboration Policy

Students are expected to maintain the highest standards of academic integrity. Cheating, plagiarism, and other forms of academic dishonesty will not be tolerated and will be subject to disciplinary action consistent with University rules and regulations. Note that this applies to **both the written answers and R code** of problem sets, research exercises, and any other form of class assignment. Students are expected to familiarize themselves with University regulations regarding plagiarism and academic dishonesty.

**You must work on the problem sets and final exam on your own.** Submitting any piece of code or answers that are from another student or external source is a violation of academic integrity. You are welcome to ask or answer clarifying questions, but you may not ask for or provide solutions (including code).

**Students in the same research exercise group are allowed to share work for the research exercise only (there will be one submission per group). Students opting-out of the group setting and choosing to work individually for the research exercise must work on their own.**

*All required assignments are subject to submission to third-party anti-cheating services for code and text similarity review.*

## Preliminary Schedule

Any changes will be announced in class and updated on the course website.

**Lecture topics listed below are accompanied by the empirical methods (italicized) that will be covered in class.**

WEEK 1 – INTRODUCTION

Reading for this week:

- Imai: Sections 1.3 "Introduction to R"; 2.2 "Subsetting the Data in R"; 3.2 "Handling Missing Data in R"; 3.3 "Visualizing the Univariate Distribution"

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| Tuesday March 30 | Course Logistics; Elections and Turnout I *(Introduction to R)* |
| Thursday April 1 | Lab 1 |

WEEK 2 – MEMBERS OF CONGRESS

Reading for this week:

- Imai: Sections 3.6 "Summarizing Bivariate Relationships"; 4.2 "Linear Regression" *through (including)* Subsection 4.2.3 "Least Squares"; Subsection 7.3.4 "Inference about Coefficients"

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| Tuesday April 6 | Lecture: Ideology and Polarization *(Linear regression)* |
| Thursday April 8 | Lab 2 |

WEEK 3 – PARTIES IN CONGRESS

Reading for this week:

- Imai: Subsection 4.2.5 "Merging Data Sets in R", Subsection 4.3.2 "Regression with Multiple Predictors"

Tuesday April 13 Lecture: Parties in Congress *(Linear regression II)*
Thursday April 15 Lab 3
*Problem Set 1 due Friday April 16*

## WEEK 4 – VOTER TURNOUT

Reading for this week:

- Imai: Subsection 4.3.3 "Heterogeneous Treatment Effects"
- Gerber, Alan S., Donald P. Green, and Christopher W. Larimer. "Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment." *American Political Science Review* 102(1): pages 33-48 EXCEPT the section "The Calculus of Voting". Access the full PDF using the UCSD VPN here: `https://doi.org/10.1017/S000305540808009X`

Tuesday April 20 Lecture: Elections and Turnout II *(Heterogeneous effects)*
Thursday April 22 Lab 4

## WEEK 5 – LEGISLATIVE EFFECTIVENESS

Reading for this week:

- Volden, Craig, Alan E. Wiseman, and Dana E. Wittmer. 2013. "When Are Women More Effective Lawmakers Than Men?" *American Journal of Political Science* 57(2): pages 326-341. Access the full PDF using the UCSD VPN here: `https://doi.org/10.1111/ajps.12010`

Tuesday April 27 Lecture: Legislative Effectiveness *(Combining concepts)*
Thursday April 29 Lab 5
*Problem Set 2 due Friday April 30*

## WEEK 6 – COMMITTEES AND DELIBERATION

Reading for this week:

- Imai, TBA

Tuesday May 4 Lecture: Congressional Committees *(Fixed effects)*
Thursday May 6 Lab 6

## WEEK 7 – CONGRESSIONAL PRIMARIES AND CANDIDATE IDEOLOGY

Reading for this week:

- Hall, Andrew B. 2015. "What Happens When Extremists Win Primaries?" *American Political Science Review* 109(1): pages 18-42. Access the full PDF using the UCSD VPN here: `https://doi.org/10.1017/S0003055414000641`
- Imai: Subsection 4.3.4 "Regression Discontinuity Design"

Tuesday May 11 Lecture: Primary Elections and Candidate Ideology *(Regression discontinuity)*
Thursday May 13 Lab 7
*Problem Set 3 due Friday May 14*

## WEEK 8 – LOBBYING AND THE REVOLVING DOOR

Reading for this week:

- Ban, Pamela, Maxwell Palmer, and Benjamin Schneer. 2019. "From the Halls of Congress to K Street: Government Experience and its Value for Lobbying." *Legislative Studies Quarterly* 44(4): pages 714-752. Access the full PDF using the UCSD VPN here: `https://doi.org/10.1111/lsq.12250`

Tuesday May 18 Lecture: Lobbying and the Revolving Door *(Regression discontinuity II)*
Thursday May 20 Lab 8
*Research Exercise Proposal due Friday May 21*

## WEEK 9 – RESEARCH EXERCISE WEEK

Tuesday May 25 Open class to work on research exercise
Thursday May 27 Open class to work on research exercise
*Research Exercise Report and Presentation Slides due Friday May 28*

## WEEK 10 – STUDENT PRESENTATIONS AND REVIEW

Tuesday June 1 Student presentations on research exercises
Thursday June 3 Final Review Q&A