

University of California, Merced / Fall 2026
POLI 175: Advanced Analysis of Political Data – Computer Lab

Lab Modality: In person, Thursdays, 7:30–8:20 AM, Kolligian Library 202

Instructor: Youngbin (Ben) Kim

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Office Hours: Thursdays, 9:00–11:00 AM, COB2-354 (Political Science Lab), or by appointment

Lab Description: This computer lab accompanies POLI 175 and provides the hands-on component of the course. While the lecture develops the statistical logic of describing data, building explanatory models, and testing hypotheses, the lab is where students put that logic into practice with real political data. Each session pairs the week's lecture material with guided work in R, moving from data management and visualization through estimation and interpretation, so that by the end of the semester students can carry out a complete analysis, from raw dataset to presentable results, on their own.

The lab assumes no prior programming experience. What it does assume is willingness to practice, since statistical computing is a skill built through repetition rather than observation. Students should expect to write code in every session.

General Program Learning Outcomes (PLOs) for Political Science

1. An understanding of the processes, theories, and empirical regularities of political institutions and political behavior in the student's chosen emphasis area: American politics, comparative politics, or international relations.
2. An ability to employ critical thinking and demonstrate social scientific literacy, including basic quantitative literacy.
3. A capacity to utilize contemporary social science research methods to conduct rigorous research on political phenomena.
4. Effective written communication skills, especially the ability to convey complex concepts and information in a clear and concise manner.
5. An ability to apply abstract theory and research methods to understand contemporary political events and public policies.

Lab Learning Outcomes

This lab was designed backward from what students should be able to do at the end of the semester. By the final session, students will be able to:

- Import, clean, and manage political datasets in R, and document their work in reproducible scripts. (PLO 3)
- Produce and interpret descriptive statistics and visualizations appropriate to the structure of the data. (PLO 2 and PLO 3)
- Estimate, diagnose, and interpret regression models introduced in lecture, and explain what the results do and do not show. (PLO 2, PLO 3, and PLO 5)
- Communicate quantitative findings in clear written form, including tables and figures suitable for a research paper. (PLO 4)

How the Lab Assessments Map onto These Outcomes

Every activity in this lab exists to build one or more outcomes above. The weekly guides develop the first three outcomes incrementally, with each session producing a working script rather than pasted output, and the later sessions bring all four outcomes together as students conduct and write up the analysis for their research paper in the main course.

Credit and Participation

The lab does not carry a separate grade. Instead, it shares the participation credit with the main lecture, and that participation grade has two equal parts. Upload your completed R script to CatCourses by the end of the week in which the guide is completed; these submissions make up 50% of the participation grade. Attendance at lab sessions makes up the remaining 50%. Working through the guides in session is the most reliable way to build the skills the course assessments require, so please do participate, and get some hands-on experience with me.

Lab Schedule

The schedule below pairs each session with its lab guide. Guides are posted on CatCourses under [Files > Lab Materials](#), and students should bring a laptop with R and RStudio installed to every session. The schedule may be adjusted as the semester progresses, and any changes will be announced on CatCourses.

Week	Date	Topic	Guide
1	9/3	Meet TA; download R and RStudio; set working directory	Intro Guide
2	9/10	Basic programming commands, read in data, examine data, calculate mean, median, mode, absolute values	Guide A
3	9/17	Dataset intro, vectors, datasets, save the dataset	Guide A
4	9/24	RStudio packages, dplyr, and generate histogram	Guide B
5	10/1	Generate cross-tabulation and scatterplot, calculate correlation	Guide B
6	10/8	Work with R symbols, operators, and the ifelse function; transform variables, handle missing data; calculate average treatment effect	Guide C
7	10/15	Generate scatterplots using the ggplot package	Guide D
8	10/22	Learn to generate probability distributions	Guide E
9	10/29	Estimate a bivariate linear regression	Guide F
10	11/5	Estimate a multivariate linear regression	Guide G
11	11/12	Generate predictions from regression models, calculate confidence intervals	Guide H
12	11/19	Download an observational dataset, navigate the codebook, develop a research question, and select variables	Guide I
13	11/26	NO CLASS (Thanksgiving break)	—
14	12/3	Pre-process and analyze your own dataset for the final presentation	Guide I
15	12/10	Work on final research paper	—

Lab Participation and Attendance: Because the lab is built around in-session practice, attendance matters more here than in a lecture course. Attendance will be recorded at each session and counts toward the participation component of your POLI 175 grade. If you must miss a session, please notify me in advance when possible; the corresponding guide will remain available on CatCourses so that you can complete the material on your own.

Academic Integrity: Students are expected to follow UC Merced's Academic Integrity and Honesty Policy. In a coding course, plagiarism includes submitting scripts written by someone else, copying another student's code, or reproducing code from web sources without acknowledgment. Collaboration on understanding concepts is encouraged, but the scripts you write must be your own work. **Plagiarized work will receive a zero, and suspected academic misconduct may be reported to the Office of Student Rights and Responsibilities in accordance with UC Merced procedures.** For more information, please review the following: [Definition of Plagiarism](#), [How to Avoid Plagiarism](#)

AI/LLM Policy: AI tools such as ChatGPT or Claude may be used to help you understand error messages, look up function syntax, or debug code you have already written. They may not be used to generate your scripts or written interpretations for you, since the purpose of this lab is for you to build these skills yourself. If you use AI in any allowed way, **please disclose it briefly in a comment at the top of your script**, for example: “# Used ChatGPT to debug the na.omit error in line 24.” Undisclosed AI use or clear evidence of AI-generated work will result in a zero. When in doubt, please ask!

Communication: Please review the syllabus and the relevant lab guide on CatCourses before emailing. I usually respond within 24 hours on weekdays, but responses may be slower on weekends, and I may not be able to answer questions sent within 24 hours of a deadline.

Everything Is on CatCourses: CatCourses will be used for lab guides, datasets, and announcements. In general, all lab activities outside of the in-person sessions will take place through CatCourses.

Accommodations: UC Merced is committed to equal access and inclusion. Students seeking accommodations should contact Student Accessibility Services as early as possible. Requests for academic accommodations are to be made through the Office of Accessibility Services, located in ACS-140. You can also contact [Student Accessibility Services](#) at (209) 228-6996. You are encouraged to contact [the Dean of Students for support and resources](#) at (209) 228-3633.

Technology Resources: If you need laptop access, UC Merced offers technology resources: <https://ue.ucmerced.edu/technology-resources>