# CIV 337: Policy Research Laboratory
# Fall 2024

**Class Time:** Monday and Wednesday, 9:30a - 11:00a
**Classroom:** CBA 6.420
**TA session:** Please reference our course website
**Course webpage:** https://github.com/dpuelz/Policy-Research-Laboratory

**Instructor:** David Puelz
**Email:** david.puelz@mccombs.utexas.edu
**Office:** GSB 5.136
**Office hours:** Individual appointments can be made here

## Course Description and Objectives

The Policy Research Laboratory (PRL) is a semester-long course in statistics, econometrics, and data science to learn the tools necessary for policy and social science research. In parallel, the students will apply these tools to real-world data and answer crucial policy questions. Policy research is important, and appropriately using data, cutting-edge statistical tools and remaining skeptical are equally important. Students can expect to leave this class with a deep understanding of policy questions and a toolbox for evaluating them.

## Required Textbooks

*Quantitative Social Science* (QSS) – Kosuke Imai

*Mastering 'Metrics* (MM) – Joshua Angrist et al.

## Homework

Exercises will be assigned each Monday and due the following Tuesday. Please submit a pdf knitted from an `Rmarkdown` file with your solutions to canvas. The exercises will be graded on a scale from 1 to 5. The grading criteria are:

- Did you make an honest, concerted attempt at each problem?
- Did you attempt to address all parts of the question?
- Did you include enough detail on what you actually did so that a well-informed reader could understand your analysis in detail? (You won't receive full credit if it's not clear what steps you actually took in your analysis.)
- Did you include properly annotated figures/tables where appropriate?
- Did you write up your solution professionally, with an actual narrative flow (good), or did you just copy and paste a bunch of `R` code without much in the way of explanation (bad)?
- Did you use sensible procedures to answer a given question?
- Did you make any significant technical mistakes?

**Research Project**

There will be a final research project where individuals either (i) replicate the results of an existing policy paper, or (ii) analyze their own data on a policy relevant topic. In both cases, you should talk with David on ideas and settle on either a paper replication or novel policy data analysis by **October 30th**. The deliverables will be a brief class presentation (15 minutes) of research findings as well as a comprehensive write-up. The write-up should be structured like an academic paper. More details about expectations and grading criteria for the research projects will be provided later in the semester.

**Evaluation**

The class grade is comprised of the following:
– Homework (20%). Lowest one is dropped.
– Midterm (30%)
– Research Project (40%)
– Engagement (10%). How often did you participate in class and contribute to class discussion?

**Topics and Timing**

Below is a timeline for the semester. It is subject to change as we make our way through these topics. Please also pay attention to the course website. I will include supplemental readings beyond those in our textbooks.

| **Date** | **Topics** | **Reading** |
|---|---|---|
| Week 1 (Aug 26, Aug 28) | Intro & `R` | QSS 1.3-1.4 |
| Week 2 (Sep 4) | `R` + Causality | QSS 2.1-2.3, MM Intro |
| Week 3 (Sep 9, Sep 11) | Causality | QSS 2.4-2.7, MM 1.1 |
| Week 4 (Sep 16, Sep 18) | Probability | QSS 6.1-6.3 |
| Week 5 (Sep 23, Sep 25) | Probability + Prediction | QSS 4.1 |
| Week 6 (Sep 30, Oct 2) | Prediction | QSS 4.2, MM 2.1 |
| Week 7 (Oct 7, Oct 9) | Prediction | QSS 4.3, MM 2.2 |
| Week 8 (Oct 14, Oct 16) | Unsupervised learning (clustering) | QSS 3.7 |
| Week 9 (Oct 21, Oct 23) | Unsupervised learning (PCA) + **midterm** (10/23) | see website |
| Week 10 (Oct 28, Oct 30) | Unsupervised learning (networks) | QSS 5.2 |
| Week 11 (Nov 4, Nov 6) | Unsupervised learning (text) | QSS 5.1 |
| Week 12 (Nov 11, Nov 13) | Heterogeneous causal effects | see website |
| Week 13 (Nov 18, Nov 20) | How to do research | see website |
| Week – (Nov 25, Nov 27) | *Thanksgiving week* | – |
| Week 14 (Dec 2, Dec 4) | Project presentations | – |
| Week 15 (Dec 9) | Project presentations | – |

**Students with Disabilities**

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at here. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

**Harassment Reporting Requirements**

Senate Bill 212 (SB 212), which went into effect as of January 1, 2020, is a Texas State Law that requires all employees (both faculty and staff) at a public or private post-secondary institution to promptly report any knowledge of any incidents of sexual assault, sexual harassment, dating violence, or stalking "committed by or against a person who was a student enrolled at or an employee of the institution at the time of the incident." Please note that both the instructor and the TA for this class are classified by SB 212 as mandatory reporters. That means we MUST share with the Title IX office any information about sexual harassment/assault that is shared with us by a student-whether in-person, via electronic communication, or as part of any class assignment. Note that a report to the Title IX office does not obligate a victim to take any action, but this type of information CANNOT be kept strictly confidential except when shared with designated "confidential employees." A confidential employee is someone a student can go to and talk about a Title IX matter without triggering any obligation by that employee to have to report the situation so that it will be investigated. A list of confidential employees is available on the Title IX website. The professor and TA for this class are NOT designated confidential employees per SB 212.

**Late Policy**

Sometimes we have bad days, bad weeks, and bad semesters. In an effort to accommodate any unexpected, unfortunate personal crisis, I have built a grace policy into the course: that is, a one-time, three-day grace period for one homework assignment. You do not have to utilize this policy, but if you find yourself struggling with unexpected personal events, I encourage you to e-mail me and our TA as soon as possible to notify us that you are using our grace policy. **All other late assignments will be penalized 10 points per day or partial day that they are late.**. This policy does not apply to the final project.

**Final Course Notes: ChatGPT, Honor Code Violations, etc.**

I encourage the use of ChatGPT and other AI tools for coding. They are tremendously useful calculators that will continue to grow in importance. I have zero tolerance for submitting work that is not your own, regardless of whether it is plagiarized or copied from a fellow student. If this occurs on either the homework, midterm, or project, I will issue an automatic zero for the deliverable. Finally, if you are reading this sentence, please send me a note stating, "I have read the syllabus Prof Dave!", and I will give you 3 bonus points on your raw midterm grade!