

# POL 3085: Quantitative Analysis in Political Science

University of Minnesota  
Spring 2023

Lecture: Monday and Friday, 8:15 - 9:30am (Blegen Hall 155)  
Lab time (Section 002): Thursday, 10:00 - 10:50am (Humphrey 35)  
Lab time (Section 003): Thursday, 11:00 - 11:50am (Humphrey 35)

Professor: Prof. Dan Myers (he/him)  
Office: 1309 Social Science Building  
Office hours: Monday and Friday 9:45 – Noon; Wednesday 1:00 – 2:00 pm  
Office hours location: 1309 SocSci (Zoom: [z.umn.edu/MyersOfficeHours](https://z.umn.edu/MyersOfficeHours))

TA: Jack Sewpersaud (he/him)  
Office Hours: Monday, 1:00 - 3:00 pm  
Office hours: Zoom: [z.umn.edu/SewpersaudOfficeHours](https://z.umn.edu/SewpersaudOfficeHours)

*“We have not succeeded in answering all our problems. Indeed we sometimes feel we have not completely answered any of them. The answers we have found have only served to raise a whole set of new questions. In some ways we feel that we are as confused as ever, but we think we are confused on a higher level, and about more important things.”*

- Earl C. Kelley

*“It was my understanding that there would be no math.”*

- Chevy Chase as President Gerald Ford, Saturday Night Live

## Overview

This class has two goals. You will:

- Learn about how to do quantitative political science research.
- Conduct your own political science research project.

Each class period and lab section is geared toward helping you understand and complete part of your final research project.

## Instructional Time

- This is a four-credit class. You are expected to attend four hours of class per week (two 1.5-hour lectures and one 1-hour lab section). In addition to time spent in class, you should budget 8-12 hours per week on average to preparing for class and working on your research project.
- In the first half of your semester, your preparation for class will be focused mostly on reading and pre-class assignments that we will use in class to help explore the

concepts. In the second half of the semester, there will be significantly less reading (often none), and you will be expected to spend the time you would have spent on the reading working on your project.

- Each assignment is a “chunk” of the final paper. If you keep up with the work throughout the semester, at the end of the semester writing your final paper should only require editing the work you’ve done into one coherent paper. (Note: you do need to edit it into a coherent paper. You can’t just submit six disconnected, unedited assignments in one document.)

## Canvas

All course materials will be on the class’s Canvas page. This includes the course schedule, all assigned readings, all assignments, and everything else. Even though some class components will not directly be through Canvas (e.g., some materials will be administered through Google Forms, Sheets, or Docs), the links to those will be in the appropriate class’s page on Canvas.

The class is split into “weeks.” Because of the Monday-Friday schedule, a “week” is Friday/Monday pair of classes. Each week (I’ll stop using quotes here) will have its own page that contains all relevant material for the class.

## Technology

In this class and its lab section you will need a computer that is capable of running RStudio. If you do not have a computer capable of this, please come talk to me as soon as possible.

## Assessment

Grading for this class will be based on six items:

1. **Lecture quizzes.** There will be seven quizzes throughout the semester, released on the last day of each class section. You can take each quiz as many times as you want and only your highest grade is recorded. You must complete each quiz within one week of its assignment date. Quizzes are not timed. Each quiz is worth 5 points.
2. **Lab quizzes.** There will be nine lab quizzes, assigned at the end of most lab sections to assess your knowledge of R. You can take each quiz as many times as you want and only your highest grade is recorded. You must complete each quiz within one week of its assignment date. Quizzes are not timed and you may take them multiple times. Each lab quiz is worth 5 points.
3. **Lab assignments.** Lab assignments are intended to be completed entirely within the lab section, are graded satisfactory/unsatisfactory, and are worth 5 points. These will be graded as quickly as possible after submission, and if the assignment is incorrect, it can be resubmitted up until the deadline at 5 pm on Monday.
4. **Paper chunks.** You will have to complete and submit five “paper chunks” throughout the semester. Each chunk contains the information necessary to draft a section of your final paper. You should consider these *drafts* – they are not expected to be

perfect, and should reflect your best effort at completing the task at the time that it is assigned. You will receive feedback on each one that you will integrate into your final paper. Each paper chunk is worth fifteen points, and will be graded satisfactory/unsatisfactory.

In addition to the satisfactory/unsatisfactory grade, we will give each paper chunk a letter grade that indicates the grade it would receive if you turned it in as part of your final paper. Regardless of this grade, you will get full credit for the paper chunk so long as it is satisfactory in quality.

5. **Final presentation.** Near the end of the semester, you will present your project to the class and to the “public”, both to practice communicating about research and to get feedback for your final paper. More detailed information about these presentations will be provided later on. The final presentation is worth 25 points.
6. **Final paper.** For your final paper, you will edit those paper chunks with the feedback I have given you into one, complete, research paper. The final paper is worth 75 points.

Assignment	Points	How Many	Total
Lecture quizzes	7	5	35
Lab quizzes	5	9	45
Lab assignments	5	9	45
Paper chunks	15	5	75
Presentation	25	1	25
Paper	75	1	75
			300

Table 1: Summary of assignments and points.

Letter	Percent	Letter	Percent
A	93-100	C	73-76.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	67-69.9
B	83-86.9	D	63-66.9
B-	80-82.9	F	0-62.9
C+	77-79.9		

Table 2: Grade scale.

Note that I do not round grades - a 89.99 is a B+, even though it is .01 from an A-.

## Communication and Office Hours

If you have questions about the course I much prefer face-to-face discussions (over Zoom or in person) to email. Face-to-face conversation is a much more efficient way to communicate, and I appreciate knowing students as more than their email addresses. Please come talk to me before or after class, or during office hours.

You do not need an appointment or permission to stop into office hours – my door (and Zoom room) is open. If you know in advance that you will be attending my office hours, you can schedule an appointment at <https://calendly.com/cdmyers>. Regular office hour times may not be convenient for you, so I'm also happy to meet with you by appointment. Just ask before or after class or, if necessary, over email, and we can arrange a time to meet.

If you do need to email us, please use the course email address [pol3085sp2023@umn.edu](mailto:pol3085sp2023@umn.edu) for all course-related communication. This allows Jack and I to both respond to your emails, which should allow for quicker responses. We will respond to all email within 24 hours, except on weekends. Though we will respond as quickly as possible, we cannot guarantee that we will respond to any email faster than 24 hours of it being sent. Please keep this in mind as deadlines approach.

I will make most announcements about class logistics at the start of the class period. Occasionally, I will communicate these announcements or details of these announcements over email and using Canvas's announcement feature. You must check your campus e-mail and Canvas announcements every day. You are responsible for any information that I communicate at the start of the class period as well as information that pass along via email or Canvas announcement.

## Attendance Policy

While I do not take formal attendance, attending class and paying attention are really important for your ability to keep up with the material and not fall behind on your paper. Students who attend and engage in class on a regular basis do better on average than students that do not. Please only miss class for reasons listed under the University's Makeup Work for Legitimate Absences policy <http://policy.umn.edu/education/makeupwork>. Please contact the instructor, the TA, or other students if you have questions about material you missed.

## Extensions and Late Work

All lecture quizzes, lab quizzes, and lab assignments are due on the dates listed on Canvas and will only be extended for cases covered by the University's Makeup Work for Legitimate Absences policy <http://policy.umn.edu/education/makeupwork>. I will accept late versions of these assignments for half-credit. Please contact me if you want to make up a quiz or assignment that has closed.

Paper chunks turned in late (whether according to the original due date or an extended due date) will lose one point for each calendar day they are turned in after the due date, to a minimum of half credit. This means that if an assignment is due on Monday, the student will lose one point if they turn it in on Tuesday, two points on Wednesday, and so forth. The deadline will only be extended for cases covered by the University's Makeup Work for Legitimate Absences policy <http://policy.umn.edu/education/makeupwork>.

The presentation date and final paper due date will only be extended for cases covered by the University's Makeup Work for Legitimate Absences policy <http://policy.umn.edu/education/makeupwork>.

Students are encouraged to plan ahead of time to assure their assignments are done on time, because each assignment builds on the previous assignment, and late assignments can easily pile up.

## **Anxiety, Panic, and Withdrawing/Disappearing**

Every semester a handful of students get behind on their work for some reason, panic, conclude they will fail and/or cannot get a good grade, and either withdraw or disappear entirely without withdrawing. Even the worst of mistakes within a semester usually doesn't mean there's no way to pass the class. If at any point in the semester you end up feeling like this, please email me or come talk to me in office hours and we can assess how you are doing and try to come up with a plan to make the rest of your semester successful and manageable. You do not have to tell me why you fell behind and you don't need to defend yourself. I am here to help you, not to judge you. I want all of you to succeed, but I can't help you if you withdraw and/or disappear without talking to me.

(That is not to say you should not withdraw. But if you think you need to withdraw, please talk to me first to see if that's really true. I won't try to convince you either way, but I can help you make a more accurate assessment of how you're doing in the class. You definitely, definitely should not disappear without withdrawing if it can possibly be helped. That is never a good idea.)

## **Grade Disputes**

Any student wishing to dispute a grade should submit a one-page memo, typed or handwritten, explaining, clearly and concisely, why points were taken off, why the student believes the points should not have been deducted, and how many additional points the student believes they should receive. All regrades can result in one of three outcomes: a grade decrease, the grade staying the same, or a grade increase. In general if the TA grades the original assignment, the instructor will do the re-grade, and vice versa.

## **Textbooks**

This class uses no textbooks. All readings will be on Canvas.

## **Accommodations (Disability and Otherwise)**

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact Disability Resource Center at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with Disability Resource Center and have a current letter requesting reasonable accommodations, please contact me as early in the semester as possible to discuss how the accommodations will be applied in the course. If you are not registered with the Disability Resource Center, but you still have access needs or accommodations (regardless of reason), please let me know.

Additionally, if there is anything I can do or provide to you to make the class more accessible, please ask.

For more information, please see the Disability Resource Center website, <https://diversity.umn.edu/disability/>.

## **Mental Health and Stress Management**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

## **Other Policies**

### **Grading and Transcripts**

For information about translation from letter grade to points on transcript, please refer to: <http://policy.umn.edu/education/gradingtranscripts>.

### **Student Conduct Code**

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: [http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf).

### **Scholastic Dishonesty**

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student\\_Conduct\\_Code.pdf](http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf)) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/education/instructorresp>.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with Prof. Sumner. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether

collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

### **Appropriate Student Use of Class Notes and Course Materials**

You may not distribute course notes, course videos, or other course materials without the explicit written approval of the professor. For additional information, please see: <http://policy.umn.edu/education/studentresp>.

### **Sexual Harassment**

“Sexual harassment” means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: <http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf>.

### **Equity, Diversity, Equal Opportunity, and Affirmative Action**

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: [http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity\\_Diversity\\_EO\\_AA.pdf](http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf).

### **Academic Freedom and Responsibility**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom and conduct relevant research. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.<sup>1</sup> When conducting research, pertinent institutional approvals must be obtained and the research must be consistent with University policies.

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

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<sup>1</sup>Language adapted from the American Association of University Professors “Joint Statement on Rights and Freedoms of Students”.

## Incompletes

If a student wishes to take an incomplete in the class and complete the material after the semester is over, please contact the instructor to discuss further.

## Department of Political Science Policy

The instructor may set dates and conditions for makeup work using a “Completion of Incomplete Work” contract form. All work must be completed no later than one calendar year after the official last day of the class.

## Class Schedule

Friday, January 20: The Course, Expectations, and How To Succeed

- The syllabus

**Lab:** Setting up and getting comfortable with R

Monday, January 23: Math Phobia. What is Programming?

- Popova, Maria. ”Fixed vs. Growth: The Two Basic Mindsets That Shape Our Lives” <https://www.brainpickings.org/2014/01/29/carol-dweck-mindset/>
- Code Academy. ”What is programming?” <https://www.codecademy.com/articles/what-is-programming>

## Puzzles and Frameworks

Friday, January 27: What is political science? Anatomy of a research paper.

Pick ONE article to read and outline it. Pick another article to read and see if it follows a similar outline. How are they the same? How are they different?

- Owens, Michael Leo, and Hannah L. Walker. ”The civic voluntarism of “custodial citizens”: involuntary criminal justice contact, associational life, and political participation.” *Perspectives on Politics* 16, no. 4 (2018): 990-1013.
- Zvobgo, Kelebogile. ”Human rights versus national interests: Shifting US public attitudes on the international criminal court.” *International Studies Quarterly* 63, no. 4 (2019): 1065-1078.
- Liu, Amy H., and Vanessa A. Baird. ”Linguistic recognition as a source of confidence in the justice system.” *Comparative Political Studies* 45, no. 10 (2012): 1203-1229.
- Thomas, Jakana. ”Rewarding bad behavior: How governments respond to terrorism in civil war.” *American Journal of Political Science* 58, no. 4 (2014): 804-818.
- Wilson, Matthew Charles, and Josef Woldense. ”Contested or established? A comparison of legislative powers across regimes.” *Democratization* 26, no. 4 (2019): 585-605.



**Lab:** Using R for calculations and setting working directories

Monday, January 30: Research questions and literature reviews.

Pick two of the assigned articles with a focus on the first section. What are the research questions? Are they important? Does they discuss the stakes – meaning, does it matter if we know the answer to the question?

- Owens, Michael Leo, and Hannah L. Walker. "The civic voluntarism of "custodial citizens": involuntary criminal justice contact, associational life, and political participation." *Perspectives on Politics* 16, no. 4 (2018): 990-1013.
- Zvobgo, Kelebogile. "Human rights versus national interests: Shifting US public attitudes on the international criminal court." *International Studies Quarterly* 63, no. 4 (2019): 1065-1078.
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- Thomas, Jakana. "Rewarding bad behavior: How governments respond to terrorism in civil war." *American Journal of Political Science* 58, no. 4 (2014): 804-818.
- Wilson, Matthew Charles, and Josef Woldense. "Contested or established? A comparison of legislative powers across regimes." *Democratization* 26, no. 4 (2019): 585-605.

Friday, February 3: Theories and hypotheses

- Chapter 4. Bergstrom, Carl T., and Jevin Darwin West. *Calling bullshit: the art of skepticism in a data-driven world*. Random House Trade Paperbacks, 2021.
- Re-read the two articles you read for last class, focusing solely on their theory sections. How does what you read line up with the Bergstrom and West chapter?

**Lab:** Installing packages and loading in data

## Ways of Knowing Things

Monday, February 6: Causation and experimental designs

- **Bring a coin to class.**
- Skim, with a focus on the experiment: Myers, C. Daniel, Hunter G. Gordon, Hyungjin Myra Kim, Zachary Rowe, and Susan Dorr Goold. "Does Group Deliberation Mobilize? The Effect of Public Deliberation on Willingness to Participate in Politics." *Political Behavior* 42(2): 557–80.

Friday, February 10: Observational Small-N Designs

- Do the pre-class activity on Canvas.
- Michener, Jamila. *Fragmented democracy: Medicaid, federalism, and unequal politics*. Cambridge University Press, 2018. Chapter 1 and Appendix A.

**Lab:** Working with data frames

Monday, February 13: Observational Large-N Designs

- Do the pre-class activity on Canvas.
- TBD

Friday, February 17: In-class conference to discuss and work on projects

- No reading.
- **Lab:** Recoding variables

## Concepts and Measurement

Monday, February 20: Concepts and measurement

- Bittner, Amanda, and Elizabeth Goodyear-Grant. "Sex isn't gender: Reforming concepts and measurements in the study of public opinion." *Political Behavior* 39, no. 4 (2017): 1019-1041.

Friday, February 24: What is data? What *can be* data?

- Do the pre-class activity on Canvas.
- **Lab:** Catch-up and synthesis

Monday, February 27: Writing survey questions

- Alwin, Duane F., and Brett A. Beattie. "The kiss principle in survey design: Question length and data quality." *Sociological methodology* 46, no. 1 (2016): 121-152.
- Jefferson, Hakeem, *The Curious Case of Black Conservatives: Construct Validity and the 7-point Liberal-Conservative Scale* (May 15, 2020). Available at SSRN: <https://ssrn.com/abstract=3602209> or <http://dx.doi.org/10.2139/ssrn.3602209>

Friday, March 3: How to use Qualtrics and in-class work to finalize surveys.

- <https://it.umn.edu/services-technologies/qualtrics>
- **Lab:** Summary statistics

## Inference

Monday, March 13: Sampling distributions

Friday, March 17: Statistical significance and hypothesis testing

- **Lab:** Data visualization

Monday, March 20: Statistical significance and hypothesis testing

## **Describing Data**

Friday, March 24: Describing data #1

- **Lab:** Visualizing your data

Monday, March 27: Describing data #2

## **Analyzing Data**

Friday, March 31: Bivariate linear regression

- **Lab:** Bivariate linear regression

Monday April 3: Bivariate linear regression practice

Friday, April 7: Multivariate linear regression

- **Lab:** Multivariate linear regression

Monday April 10: Multivariate linear regression practice

Friday, April 14: Interaction terms, time, and space

- **Lab:** Categorical variables, fixed effects, interaction terms

Monday, April 17: Exploring model fit

## **Preparation and Presentation**

Friday, April 21: Practice presentations

- **Lab:** Presentation Work Time

Week of April 24: Presentations, exact date and time TBD.