POLI 7000-001: Research Methods for Public and Nonprofit Organizations

Spring 2024 | M 3:30 PM - 6:00 PM | Haley 2346

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Office Hours: M 12:00 PM - 1:15 PM; Appointment (email me; Zoom ID: 7720942787)

Overview, Objectives, and Outcomes

All of our knowledge of the social world is quite literally *produced*. One way of producing this knowledge is systematically collecting scored observations about the world around us and using those scores to derive conclusions about patterns. To do this requires knowledge of both specific methods, as well as a background in a probabilistic way of thinking about the world. We'll develop both in this class.

In particular, we'll focus on building these skills of research design, methods, and analysis in the context of the professional environment of your MPA degree. You'll often be asked to generate conclusions and make recommendations on the basis of data; moreover, you'll be asked to make those recommendations in plain, clear language that is familiar to colleagues and employers.

Student Learning Outcomes:

- 1. Students will be able to identify independent and dependent variables.
- 2. Students will be able to generate basic datasets to answer causal questions.
- 3. Students will be able to solve basic conditional probability problems.
- 4. Students will be able to describe and implement basic dataset structure and operations.
- 5. Students will be able to describe and execute classic frequentist statistical significance tests.
- 6. Students will be able to execute, interpret, and diagnose OLS.

Official catalog description: Research Methods for Public and Nonprofit Organizations. (3). LEC. 3. Statistics and other quantitative techniques for the analysis of policy and for administrative decision making.

Prerequisites

Graduate classification.

Expectations

Graduate courses, especially graduate courses for research design and methods, are intended to lay the foundation for your future as a researcher. Each one of you have elected to be here and to pursue a graduate degree, so it is to your benefit to attend class, do the outside readings, complete the homework assignments, and, most importantly, come to class prepared to discuss the material. Graduate courses are built around an exchange of ideas, so come prepared with your ideas! I refuse to enable anyone to actively seek out a "C" grade in this class, and if you plagiarize any portion of any assignment (including plagiarizing a fellow student's answers), it's an automatic zero.

If you choose to come to class, you should do so responsibly. I fully expect that you will have done any assigned readings before coming to class. Class is much more interesting when you engage with both your instructor and the material. I also expect that you make a reasonable effort to maintain classroom decorum by refraining from doomscrolling, sleeping, texting, or whatever social network/game/trend that I'm oblivious to. Please silence all cell phones These ideas are formally outlined in the Auburn University Classroom Behavior policy: see tinyurl.com/au-st-pol for more details. Consistent with Auburn University policy, I encourage class attendance from all students.

This class will be hard. You will be required to learn a new software program for analyzing data. You will sink if you wait until the last minute to start assignments, if you are not attentive during class, and if you do not ask questions when you have them.

Text

There is one required book for this class.

Kellstedt, Paul M. and Guy D. Whitten. 2018. *The Fundamentals of Political Science Research: Third Edition*. Cambridge: Cambridge University Press. ISBN: 978-1-316-64267-2

Econometrics books are reference texts that you'll revisit for the life of your career, so I recommend owning your own copy of the book. The other texts are articles available from the Auburn University Library. I will not post the articles to Canvas unless the library doesn't provide access; learning how to acquire the full text of an article is an essential skill in graduate school. I included the DOI of every article: it will point you to the article's website if you "resolve" it at www.doi.org. All of the articles are ungated if you access them on Auburn's Wifi network. If you're at home, you can still get the full text by logging into the library and searching for the journal. If you cannot find one of the articles, let me know, and I'll make it available on Canvas or email.

You must obtain a copy of R (available from https://cran.revolutionanalytics.com/). You will probably hate, then maybe learn to love, using R. We will use it because it is (a) free and (b) flexible enough to test most theories of political science. That means you are guaranteed to be able to use it in your professional career, since it's free to obtain and use. You're free to use another analysis software if you like. I'll devote minimal in-class time to answering questions in other software programs. Full disclosure: the only other software I even have on my computer is Stata, so it will be difficult for me to answer in-class questions on SAS, SPSS, or any other program. We will devote an extensive amount of class time to learning to use R effectively.

Assignments

The course is divided into the following components:

Datacamp assignments	50 points
Writing assignment 1	50 points
Writing assignment 2	100 points
Writing assignment 3	150 points
Writing assignment 4	250 points
Midterm	100 points
Final	150 points
Total	850 points

In order, those components are ...

Datacamp assignments: I am trying a new tool, Datacamp Classrooms, to help facilitate learning R. On a regular basis, starting in the first week, you will be assigned basic coding assignments on Datacamp. Detailed instructions on how to register for this resource and the required assignments will be posted on Canvas. Assignments and dates will be communicated through Canvas. You should check this resource often.

Writing assignments: There will be four writing assignments throughout the semester. You'll be asked to use R plus a variety of political science data to practice using statistics to come to empirical conclusions. These four writing assignments will cover four different areas of public administration. The deliverables will become progressively more statistically demanding and professionally comprehensive. Each assignment will be outlined separately on Canvas as their assignment dates approach.

You're also reminded that a core part of successfully completing the MPA program is an ePortfolio (aub.ie/mpa-eportfolio). The MPA Program supports the Auburn University ePortfolio initiative, and is an active member of the ePortfolio Project Cohort. As a result, MPA students are required to develop an ePortfolio that 1) demonstrates their proficiency in each of the five MPA program core competencies, 2) articulates their own personal public service philosophy, and 3) identifies their professional goals and incorporates examples of learning, classwork and/or experience that illustrates progression toward those goals. You are encouraged to consider how your experience in this class relates to your professional goals and how your work in the course might be included in your ePortfolio.

The writing deliverables in this course make excellent artifacts for the ePortfolio. Artifacts are meant to be representations of the core competencies of the MPA program. This course is especially adept at "demonstrate the ability to analyze, synthesize, think critically, solve problems, and make decisions." If you're interested in using one of the writing assignments as an artifact, remember that it must be introduced by self-reflection (outlined in the ePortfolio roadmap at aub.ie/mpa-eportfolio). If you'd like feedback on self-reflection, submit it alongside your assignment and I am happy to provide extra (ungraded) feedback on your reflection.

Midterm examination: this will be a take-home exam due on March 11. We will not have class this week. We will discuss midterm exam details as the date approaches.

Final examination: this will be a take-home exam due on April 29. We will discuss final exam details as the date approaches.

Makeups and Grades

Makeup assignments/examinations will only be offered to those with a University excused absence, which can be found at tinyurl.com/au-st-pol. It is your responsibility to ensure that your absence is covered by the University, and it is your responsibility to comply with all policies. These policies require that you notify me of your absence prior to the date of absence if such notification is feasible, but within one week from the missed class. Your makeup examination must be scheduled within two weeks of this notification (though I recommend much, much earlier). If I need additional information on your absence (doctor's notes, for instance), you must provide this additional documentation within one week of the last date of the absence. Note that this policy also allows for makeup examinations for reasons deemed appropriate by the instructor. If you do not have a University excused absence, and you are going to miss an examination, it is much easier for me to work with you if you notify me promptly, especially if you can provide some sort of documentation.

 $\begin{array}{lll} 89.5\text{-}100: & A \\ 79.5\text{-}89.49: & B \\ 69.5\text{-}79.49: & C \\ 59.5\text{-}69.49: & D \\ 59.49\downarrow: & F \end{array}$

I use the standard Auburn University grading scale. To maintain fairness, I do not change grades under any circumstances except when I make a mathematical error in computing your grade. There is no extra credit. All grades will be posted to Canvas.

Contacting Me

I'm in Haley almost every day, but especially during my listed office hours. I check my email very, very regularly. If you want to get in touch with me through email, I ask that follow three guidelines when attempting to contact me. First: include the course number and section number [7000-001] in the subject of your email. Your email will almost certainly get lost in the abyss if it missing this information. Second: wait at least 48 hours, not including weekends, to send a second email. I promise I will get to it, but it may not be immediate. Third: email me only from your Auburn University official email address. In the event that I need to contact you, it will almost certainly be at your @auburn.edu email address. You should check this email often!

Student Academic Honesty

Auburn University is a institution committed to integrity and honor. It is your job as a University citizen to uphold those values. I will not tolerate any cheating or plagiarism, broadly defined as

using unauthorized aids during examinations or attempting to represent someone else's work as your own. You are not as sly as you think you are. With hundreds of heads facing forward, it is extremely easy to tell who is working alone and who is not. Be aware that academic dishonesty can lead directly to failing the course and being referred to the Academic Honesty Committee. Penalties include expulsion from Auburn, as per Chapter 1202 of Title XII. For additional information visit tinyurl.com/au-st-pol.

Statement on Artificial Intelligence

Artificial intelligence (AI) tools are a part of the modern workplace and toolkit. To pretend they do not exist is to stick one's head in the sand. However, you still must be able to explain what an AI tool is doing. Accordingly, if you use an AI tool (such as ChatGPPT), you must do two things. First, you must cite your use of the AI tool as a tool. Second, and much more importantly, you must be able to explain what any code generated is doing. Failure to be able to offer this explanation will be considered traditional plagiarism and cheating. The instructor reserves the right to request this explanation through whatever medium required (i.e. email followup, office visit, pop quiz, etc.).

Emergency Contingency

If normal class is disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please electronically submit your approved accommodations through AU Access and make an individual appointment with the me during the first week of classes (or as soon as possible if accommodations are needed immediately). If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

Any requests or arrangements made with the instructor in person <u>must</u> be followed up with an official email request for documentation. If you believe you may need an accommodation, it is your responsibility to secure it before the first exam.

Copyrighted Materials

The lectures, presentations (including slides), readings, and exams for this course are copyrighted, so you do not have the right to copy and distribute them. This includes recording class lectures.

Important Dates

- January 15 (Monday): No in-person class.
- January 17 (Wednesday): Last day to add course.
- January 31 (Wednesday): 15th Class Day (last day to drop with no grade assignment).
- February 28 (Wednesday): Mid-semester grades posted.
- March 4 (Monday): Spring Break (no class).
- March 11 (Monday): Midterm Exam (no class).
- March 14 (Thursday): 41st Class Day (deadline to request moving final exam).
- April 19 (Friday): Last day to withdraw with no grade penalty (W).
- April 29 (Monday): Final Exam.

Course Outline

Week 1 (January 15): Introduction to R

• Kellstedt and Whitten, Chapter 1

No in-person class: Martin Luther King, Jr. Day.

Week 2 (January 22): R, Basic Data Management in R, and Data Visualization

Week 3 (January 29): Theories, Hypotheses, and Causality

- Druckman, James N. and Richard M. Shafranek. 2020. "The Intersection of Racial and Partisan Discrimination: Evidence from a Correspondence Study of Four-Year Colleges." The Journal of Politics 82(4): 1602-1606. DOI: 10.1086/708776
 - Shows clear, concise, directional hypotheses
- Fraga, Bernard L., Eric Gonzalez Juenke, and Paru Shah. 2020. "One Run Leads to Another: Minority Incumbents and the Emergence of Lower Ticket Minority Candidates." The Journal of Politics 82(2): 771-775. DOI: 10.1086/706599
 - What were some of the Z variables that were threats to causality?
- Kellstedt and Whitten, Chapters 2 and 3

Week 4 (February 5): Case Selection and Measurement

- Dassonneville, Ruth, Mary K. Nugent, Marc Hooghe, and Richard Lau. 2020. "Do Women Vote Less Correctly? The Effect of Gender on Ideological Proximity Voting and Correct Voting." The Journal of Politics 82(3): 1156-1160. DOI: 10.1086/707525
 - What does it mean to "vote correctly"? How is it measured here?
- Kellstedt and Whitten, Chapters 4-6

Week 5 (February 12): Bivariate Statistics, the Frequentist Approach, and the Ideas of Inference and Testing

- Kellstedt and Whitten, Chapters 6-8
- The Central Limit Theorem. https://statisticsbyjim.com/basics/central-limit-theorem/

Week 6 (February 19): The Beauty and Logic of Regression

• Kellstedt and Whitten, Chapter 9

Writing assignment 1 due at 11:59 PM.

Week 7 (February 26): Linear Regression, Inference about the Estimator, and Model Fit

- Gross, Justin H. 2015. "Testing What Matters (If You Must Test at All): A Context-Driven Approach to Substantive and Statistical Significance." American Journal of Political Science 59(3): 775-788. DOI: 10.1111/ajps.12149
 - What is the "null hypothesis"? What are we testing? Just because something is statistically significant, does that mean it is substantively significant?

Week 7.5 (March 4): Spring Break (No Class)

Week 8 (March 11): Midterm (No Class)

Midterm Exam due March 11 at 11:59 PM.

Week 9 (March 18): Multivariate Regression and Omitted Variables Bias

- Achen, Christopher H. 2002. "Toward a New Political Methodology: Microfoundations and ART." Annual Review of Political Science 5: 423-450.
 DOI: 10.1146/annurev.polisci.5.112801.080943
 - Just because we should put a million variables in an OLS model, does that mean we should? How do we balance this against omitted variables bias?
- Kellstedt and Whitten, Chapters 10 and 11

Week 10 (March 25): OLS Extension I: Graphical Interpretations and Making Predictions

Week 11 (April 1): OLS Extension II: Categorical Predictors

• Bell, Andrew, and Kelvyn Jones. 2015. "Explaining Fixed Effects: Random Effects Modeling of Time-Series Cross-Sectional and Panel Data." *Political Science Research and Methods* 3(1): 133-153. DOI: 10.1017/psrm.2014.7

- A simple strategy when you have data over time

Writing assignment 2 due at 11:59 PM.

Week 12 (April 8): OLS Extension III: Statistical Considerations (Collinearity, Leverage, Influence, Homoscedasticity and Non-linearity)

Week 13 (April 15): OLS Extension IV: Solving Applied Problems

Writing assignment 3 due at 11:59 PM.

Week 14 (April 22): OLS Extension V: Interactions

- Brambor, Thomas, William Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analysis." Political Analysis 14(1): 63-83. DOI: 10.1093/pan/mpi014
 - We should be making pictures!
- Berry, William D., Matt Golder, and Daniel Milton. 2012. "Improving Tests of Theories Positing Interaction." *The Journal of Politics* 74(3): 653-671. DOI: 10.1017/S0022381612000199
 - We should be making pictures!
- Grissom, Jason A., Jill Nicholson-Crotty, and Sean Nicholson-Crotty. "Race, Region, and Representative Bureaucracy." *Public Administration Review* 69(5): 911-919. DOI: 10.1111/j.1540-6210.2009.02040.x
 - Excellent illustration of the theory behind an interaction

April 29 (Monday): Final Exam due at 11:59 PM. April 29 (Monday): Writing assignment 4 due at 11:59 PM.