

Professor David Cottrell, Ph.D.

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Office: Baldwin Hall 380D

Office Hours: Wednesday, 1:00–2:55 PM

Class Meetings

Wednesday, 2:55–5:35 PM

Baldwin Hall 302

Course Description & Details

COURSE DESCRIPTION: This course provides an introduction to research design in political science. We consider what makes good political science research, the challenges in implementing it, and the strategies for overcoming those challenges. In particular, we focus on the fundamental problem of causal inference, the threats to making valid causal claims, and how political scientists address these threats through different research methods. The course covers a variety of these methods, including experiments, comparative case studies, regression, instrumental variables, difference-in-differences, matching, regression discontinuity, and fixed effects designs. By the end of the course, you will be familiar with a range of research designs to help improve the validity of your own political science research.

Required Course Materials

READINGS: Each week, you will be assigned a set of readings on a design-related topic. Typically you will be assigned a chapter from a textbook as well as a related journal article. Most readings are available to you for free via Google Scholar, a dedicated website, or through the university library, at <http://gilfind.uga.edu/>. Readings that are not available through these sources will be made available on the course's eLC page. The only exception to this is Angrist and Pischke (2014). You will need to purchase this text independently.

We will engage extensively with the following texts over the course of the semester:

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| (NHK) | Huntington-Klein, N. (2025). <i>The Effect: An Introduction to Research Design and Causality</i> (2nd ed.). Chapman & Hall/CRC. |
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| (SCU) | Cunningham, S. (2021). <i>Causal Inference: The Mixtape</i> . Yale University Press. |
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| (A&P) | Angrist, J. D., & Pischke, J.-S. (2014). <i>Mastering 'Metrics: The Path from Cause to Effect</i> . Princeton University Press. |
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| (K&W) | Kellstedt, P. M., & Whitten, G. D. (2013). <i>The Fundamentals of Political Science Research</i> (3rd ed.). Cambridge University Press. |
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| (KKV) | King, G., Keohane, R. O., & Verba, S. (1994). <i>Designing Social Inquiry: Scientific Inference in Qualitative Research</i> . Princeton University Press. |
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Assessment and Grading

EVALUATION:

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- (50%) **Attendance/Participation** — Attendance and participation is foundational to graduate courses. You are expected to attend each class having completed all assigned readings and ready to ask questions and discuss course material. You will be graded on the frequency of your attendance, contributions to discussions, and completion of any in-class assignments. Moreover, as part of your participation each week, you will be asked to answer a prompt (see course outline below) that applies the week's material to your own research question. This is intended to help you develop your research design week-by-week in preparation for your research design paper. If you are unable to attend a class for whatever reason, please email me prior to the start of class. You will be responsible for any material that you miss.
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- (50%) **Research Design Paper and Workshop** — Write a research design proposal using one of the designs we have discussed in the course. The research design can either be experimental (a lab experiment, survey experiment, field experiment, or natural experiment) or observational (regression, matching, discontinuity, instrumental variables, or difference-in-differences). The design should be written as a 5–7 page research proposal, covering your research question, theory/hypotheses, data and measurement, and proposed methodological test. And it will conclude with an assessment on the validity of the design, detailing its strengths and weaknesses. To prepare, you will submit a one-page proposal due **Wednesday, October 14** describing your research question and your tentative plan for a research design. Later in the semester, you will present your design in a design workshop **Wednesday, November 11** to receive feedback from your peers. The final paper is due by the last day of finals week (Wednesday, December 9). Papers will be graded on a rubric following the sections below.
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PAPER AND WORKSHOP PRESENTATION STRUCTURE: The paper and your workshop presentation should have the following sections:

- 1) Research question
- 2) Theory/hypotheses
- 3) Data and measurement
- 4) Proposed methodological test
- 5) Assessment of design validity

Course Statements & Policies

ARTIFICIAL INTELLIGENCE: You are welcome to explore the use of generative artificial intelligence (GAI) tools for your work, but use of GAI tools should be limited to providing support as you develop your thinking and knowledge base for an assignment. Any use of GAI output must be appropriately cited or disclosed.

ACADEMIC HONESTY: UGA Student Honor Code: *“I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others.”* A Culture of Honesty, the University’s policy and procedures for handling cases of suspected dishonesty, can be found at honesty.uga.edu.

ACCOMMODATION FOR DISABILITIES: If you plan to request accommodations for a disability, please register with Accessibility & Testing. They can be reached by visiting Clark Howell Hall, calling 706-542-8719 (voice) or 706-542-8778 (TTY), or by visiting <https://accessibility.uga.edu/>.

PREFERRED NAMES/PRONOUNS: Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student’s legal name. I am eager to address you by your preferred name and/or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

UGA WELL-BEING RESOURCES: UGA Well-being Resources promote student success by cultivating a culture that supports a more active, healthy, and engaged student community. Anyone needing assistance is encouraged to contact Student Care & Outreach (SCO) in the Division of Student Affairs at 706-542-8479 or visit sco.uga.edu. Student Care & Outreach helps students navigate difficult circumstances by connecting them with the most appropriate resources or services. They also administer the Embark@UGA program which supports students experiencing, or who have experienced, homelessness, foster care, or housing insecurity. UGA provides both clinical and non-clinical options to support student well-being and mental health, any time, any place. Whether on campus, or studying from home or abroad, UGA Well-being Resources are here to help.

- Well-being Resources: well-being.uga.edu
- Student Care and Outreach: sco.uga.edu
- University Health Center: healthcenter.uga.edu
- Counseling and Psychiatric Services: caps.uga.edu or CAPS 24/7 crisis support at 706-542-2273
- Health Promotion/Fontaine Center: healthpromotion.uga.edu
- Accessibility & Testing: <https://accessibility.uga.edu/>

Additional information, including free digital well-being resources, can be accessed through the UGA app or by visiting <https://well-being.uga.edu>.

DISCLAIMER: The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Course Outline

{Fall 2026: Wed 2:55–5:35 PM, Baldwin Hall 302}

Week 1. Introduction/Syllabus

Wed Aug 19

Week 2. Science and Research Design

Wed Aug 26

- Popper, K. R. (1963). “Science: Conjectures and Refutations” (Chapter 1). In *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge & Kegan Paul.
- KKV, “Chapter 1: The Science in Social Science”
- NHK, “Chapter 1: Designing Research”
- NHK, “Chapter 2: Research Questions”
- *Come up with a research question of your own. Provide a basic theory answering the question and a hypothesis about its observable implications.*

Week 3. No class — instructor at conference

Wed Sep 2

Week 4. Descriptive Inference and Measurement

Wed Sep 9

- KKV, “Chapter 2: Descriptive Inference”
- K&W, “Chapter 5: Measuring Concepts of Interest”
- McDonald, M. P., & Popkin, S. L. (2001). The Myth of the Vanishing Voter. *American Political Science Review*, 95(4): 963–974.
- *Take your causal question and describe how you would measure its key concepts. Are your measures conceptually clear, valid, and reliable?*

Week 5. Causal Inference

Wed Sep 16

- KKV, “Chapter 3: Causal Inference”
- SCU, “Chapter 4: Potential Outcomes Causal Model” (Section 1 only)
- Chen, J., & Cottrell, D. (2016). Evaluating partisan gains from Congressional gerrymandering: Using computer simulations to estimate the effect of gerrymandering in the U.S. House. *Electoral Studies*, 44, 329–340.
- *State your question using a potential outcomes framework. What is the treatment and what are the potential outcomes $Y(1)$ and $Y(0)$?*

Week 6. Causal Diagrams (DAGs)

Wed Sep 23

- NHK, “Chapter 6: Causal Diagrams”
- NHK, “Chapter 7: Drawing Causal Diagrams”
- NHK, “Chapter 8: Causal Paths and Closing Back Doors”
- *Draw a DAG for your research question, identifying any back-door paths.*

Week 7. Experiments: Lab, Survey, Field, and Natural Experiments

Wed Sep 30

- A&P, “Chapter 1: Randomized Trials”
- Gerber, A. S., Green, D. P., & Larimer, C. W. (2008). Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment. *American Political Science Review*, 102(1), 33–48.
- *Design the ideal experiment to answer your question. How would you randomize the treatment? Is it feasible? Is it ethical?*

Week 8. Comparative Case Studies

Wed Oct 7

- KKV, “Chapter 4: Determining What to Observe”
- Lijphart, A. (1971). Comparative Politics and the Comparative Method. *American Political Science Review*, 65(3), 682–693.
- Geddes, B. (1990). How the Cases You Choose Affect the Answers You Get: Selection Bias in Comparative Politics. *Political Analysis*, 2: 131–150.
- Gamboa, L. (2017). Opposition at the Margins: Strategies against the Erosion of Democracy in Colombia and Venezuela. *Comparative Politics*, 49(4): 457–477.
- *Describe a comparative case study that would help you to answer your research question. How would you choose your cases?*

Week 9. Regression and Matching (paper proposal due)

Wed Oct 14

- A&P, “Chapter 2: Regression”
- NHK, “Chapter 14: Matching”
- Dale, S. B., & Krueger, A. B. (2002). Estimating the payoff to attending a more selective college: An application of selection on observables and unobservables. *The Quarterly Journal of Economics*, 117(4), 1491–1527.
- Boyd, C. L., Epstein, L., & Martin, A. D. (2010). Untangling the Causal Effects of Sex on Judging. *American Journal of Political Science*, 54: 389–411.
- *Describe a regression or matching strategy to help you answer your research question. What would you need to control for or match on?*

Week 10. Instrumental Variables

Wed Oct 21

- A&P, “Chapter 3: Instrumental Variables”
- Acharya, A., Blackwell, M., & Sen, M. (2016). The political legacy of American slavery. *The Journal of Politics*, 78(3), 621–641.
- *Describe an instrument for your treatment variable. Does it satisfy the exclusion restriction?*

Week 11. Regression Discontinuity

Wed Oct 28

- A&P, “Chapter 4: Regression Discontinuity Designs”
- Lee, D. S., Moretti, E., & Butler, M. J. (2004). Do voters affect or elect policies? Evidence from the U.S. House. *The Quarterly Journal of Economics*, 119(3), 807–859.

- Describe a discontinuity design to help you answer your research question. Is the treatment threshold arbitrary?

Week 12. Panel Designs: Difference-in-Differences and Fixed Effects

Wed Nov 4

- A&P, “Chapter 5: Difference-in-Differences”
- NHK, “Chapter 16: Fixed Effects”
- Grumbach, J. M., & Hill, C. (2022). Rock the registration: Same day registration increases turnout of young voters. *The Journal of Politics*, 84(1), 405–417.
- Kaplan, E., & Yuan, H. (2020). Early voting laws, voter turnout, and partisan vote composition: Evidence from Ohio. *American Economic Journal: Applied Economics*, 12(1), 32–66.
- Describe a difference-in-difference design to help you answer your research question. Does it satisfy the parallel trends assumption?

Week 13. Design Workshop (parallel panels; structured peer feedback)

Wed Nov 11

Week 14. AI and the Research Process

Wed Nov 18

- Grossmann, I., Feinberg, M., Parker, D. C., Christakis, N. A., Tetlock, P. E., & Cunningham, W. A. (2023). AI and the transformation of social science research. *Science*, 380(6650), 1108–1109.
- Bail, C. A. (2024). Can Generative AI Improve Social Science? *Proceedings of the National Academy of Sciences*, 121(21).
- Do you think generative AI will be useful for answering your research question? Why or why not?

Week 15. Thanksgiving Break — no class

Wed Nov 25

Research design paper due by the last day of finals week (Wednesday, December 9).