

**SCIENTIFIC METHOD AND RESEARCH DESIGN (CRN 21154)**  
**Government 500-002, Graduate Seminar**  
**George Mason University**  
**School of Policy, Government, and International Affairs**  
**Thursdays 7:20pm – 10:00pm**  
**Innovation Hall 133**  
**Spring 2020**

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Office Hours: Tuesdays 3 – 4:30pm, or by appointment  
Course Website: Available for enrolled students at <http://blackboard.gmu.edu>  
Schar School Main Office: Research Hall 359

## **I. Course Description**

This course provides a foundation in the scientific method, especially with respect to social scientific research questions. The topics covered in this course provide students with the basis for understanding, investigating, and critiquing political science research. The focus of this course is on scientific integrity and rigor. We will concentrate on topics of logical deduction, falsification, persuasion, causality, and evidence. The principles addressed in this course are applicable to all varieties of questions and methods addressed by political scientists.

## **II. Course Goals**

- Identify the strengths and weaknesses of different research design strategies.
- Develop unique social scientific research designs to evaluate questions in political science.
- Articulate arguments and ideas in written and oral form in a compelling manner.
- Write a research proposal that could provide the basis for a Master's or PhD thesis.

## **III. Course Components**

*Class Presentation & Participation (15%)* Each week, one (or two) student(s) will be responsible for presenting the required readings. The student presenter(s) should circulate discussion questions to the rest of the class prior to the start of class (no later than Wednesday at 5:00pm). The presenter will provide a brief oral summary of the readings and help to start discussion about the day's topics. The presenter should note points of interest, confusion, or controversy in the readings and provide a thoughtful criticism.

*Weekly Writing Assignments (25%)* Of the 13 class meetings described below, 8 of them include a short writing prompt relevant to the week's readings. The writing assignments are designed to engage with the assigned readings and to help students apply research design lessons to typical political science research publications. Assignments are due at midnight on the day of class and should be submitted on Blackboard.

*Brief Research Designs (2) (15% each)* Each student will write two brief unique research designs (3-6 pages). Think of these as warm-up assignments for the larger research design due at the end of the course. One of the brief designs will describe a social science experiment that seeks to address a political question, and the other will describe a question that is answered through a careful case study approach. Students are free to be highly hypothetical and creative in these assignments. They will be graded on coherence, scientific integrity, and the probability that, if enacted, the research would lead to insights or inferences not previously understood. Essays are due on:

**April 2 - experimental design**

**April 23 – case study design**

*Complete Research Design (30%)* Each student will write one complete research design (12-20 pages) that includes the following components:

- A clear, well-motivated research question
- A literature review that places the question in context of extant knowledge of the topic
- A clear, detailed research design procedure that reflects the details discussed in the course (e.g., sampling, inference, falsification, validation, measurement, etc.)

The essay constitutes the final exam for the course and should reflect the comprehensiveness this implies. It is due by **11:59pm on Thursday, May 7.**

#### **IV. Logistics**

*Incompletes.* I am not inclined to offer incomplete grades. I strongly advise you to organize yourself to complete the coursework in a timely fashion. I am open to helping you with your assignments, of course, and will do my best to help you develop projects of a reasonable scale. Students rarely start the semester planning to take an incomplete, but it is easy to get behind. Know that I will not be comfortable offering incomplete grades.

*Cheating, Plagiarism, and Academic Integrity.* Students in this course will be expected to comply with the George Mason University Honor Code (see <http://honorcode.gmu.edu/>). Any student engaged in any academic misconduct *will receive an F on the offending exam or assignment.* Egregious violations will result in an F grade for the course and will be reported to the appropriate Dean's office. These violations include cheating on an exam, using someone else's work as your own, and plagiarizing the written word. Plagiarism (using someone else's words or ideas without providing credit or citation) is a serious offense. *If you have any questions at all about what constitutes cheating, plagiarism, or academic misconduct, please ask the instructor.*

*Students with Disabilities.* If you have a disability for which you are or may be requesting an accommodation, please let me (the instructor) know and contact the Disability Resource Center (DRC) at (703) 993-2474. All discussions with me regarding disabilities are confidential.

*Grading.* In this course, I will use a grading scale that is typical of Ph.D.-level courses that includes a four-part scale. You can think of the scale as being: high-pass, pass, low-pass, or fail. The grade scale and its interpretation is the following:

<b>Grade</b>	<b>Interpretation</b>
A	Excellent work; high pass.
A-	Good work; pass.
B+	Work needs some improvement; low-pass. Some additional attention may be required before advancing to PhD candidacy.
B or lower	Your work has not been adequate Ph.D.-level work.

PhD students can think of their letter grades as a means of communicating their position in the degree program and as subtle advice about whether or not an academic career path is advisable. Master's students will also be graded on this scale, but the interpretation of letter grades is more about a reflection of the quality of the work, and less of a message to the student about career paths.

## **V. Required Texts**

The reading load for this course is intense and dense. It is vital that you keep up with the readings. One of the most important skills you will learn as a graduate student (most important in terms of being successful in graduate school) is how to efficiently digest a large volume of readings. I know that you will not be able to read every word that is assigned; but you will need to learn how to quickly glean the most important points from each reading. While I cannot require it, I *strongly* encourage you to take notes on everything you read. Good organization and careful note taking will increase your retention of the material, improve your ability to recall information, lead to superior classroom discussions, and reduce your research and study time at later points. Taking notes may mean it takes longer to get through some material, but the (long term) benefits of doing so, far exceed the (short term) costs.

For substantive articles that we read, as a minor guide to digesting volumes of information in an efficient way, use the following questions to help focus your attention about each piece of research:

- 1.) What is the main question the author is asking?
- 2.) What motivates the question/why is the author asking the question?
- 3.) What is the primary expectation, hypothesis, or claim the author seeks to test?
- 4.) On what theory or logic is the expectation based?
- 5.) What methods of investigation has the author used to evaluate the claim?
- 6.) What are the primary findings? Were the expectations met?
- 7.) How does this research advance, or contribute to, our knowledge of this topic?

In addition to the following required texts, a series of articles are listed in the detailed weekly description below. I strongly recommend that students use bibliographic software to access, document, and catalog the items they read. While there are many such software options around, I recommend using Zotero, a free add-in for your web-browser. It works with most browsers but is designed to work in Firefox and you'll get the most functionality from it if you use it with Firefox. Information and tutorials on Zotero are available [here](http://infoguides.gmu.edu/politics/zotero) (<http://infoguides.gmu.edu/politics/zotero>). As a first assignment, I ask that students explore this software and use download all the readings into Zotero. You may notice that I have not provided links in the syllabus to the readings. All the readings are available through web access at Mason's library. I recommend using Jstor.org or Google Scholar (<http://scholar.google.com/>) to find the articles listed below. You'll need to be logged into a secure Mason portal, either from a campus IP, by responding with your Mason username and password at the library prompt. From the library homepage you can search for Jstor, or political science direct, which will give you most of the articles, except those published in the last few years. For recent articles, first log into a Mason connection, then follow a google scholar link that takes you directly to the source journal. We will go over these strategies in class. Using bibliographic software will make your life easier—never fret about formatting a bibliography ever again! For graduate students who expect to take field exams, this approach is essential.

### **Required Books**

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press.

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press.

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press.

### **Recommended Books**

Brady, Henry E., and David Collier. 2010. *Rethinking Social Inquiry: Diverse Tools, Shared Standards*. Rowman & Littlefield Publishers.

Clarke, Kevin A., and David M. Primo. 2012. *A Model Discipline: Political Science and the Logic of Representations*. OUP USA.

Johnson, Janet Buttolph, H. T. Reynolds, and Jason D. Mycoff. 2015. *Political Science Research Methods*. CQ Press.

## **VI. Course Schedule and Reading Assignments**

### **Thursday, January 23**

#### **INTRODUCTION TO THE COURSE**

#### *Required Readings:*

Noel, Hans. 2010. "Ten Things Political Scientists Know That You Don't." *The Forum* 8 (3). doi:10.2202/1540-8884.1393.

**Assignment: Bring to class something convincing. This can be an advertisement, blog post, song, poem, editorial, etc. We'll use these examples to discuss the principles of persuasion. Why do we believe what we believe?**

### Thursday, January 30

#### INTRODUCTION TO RESEARCH DESIGN AND TOOLS OF THE PROFESSION

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTER 1]

Bond, Jon R. 2007. "The Scientification of the Study of Politics: Some Observations on the Behavioral Evolution in Political Science." *Journal of Politics* 69 (4): 897–907. doi:10.1111/j.1468-2508.2007.00597.x.

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTER 1]

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press. [CHAPTER 1]

**Assignment: Write a letter to the editor in response to calls from some members of Congress to defund federal government research support for political science. Critics of such funding suggest that federal dollars should not be spent on political science research because it is wasteful, often confirmatory of the obvious, or that the government is spending a lot of money to collect data that is not necessary in our modern world. In your editorial, respond to critiques that political science is not a true science and does not make meaningful contributions to our world or government.**

### Thursday, February 6

#### MAKING A CREATIVE CONTRIBUTION AND TOPIC SELECTION

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTER 2]

Davis, Murray S. 1971. "That's Interesting." *Philosophy of the Social Sciences* 1 (2): 309.

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTER 2]

Useem, Bert. 1997. "Choosing a Dissertation Topic." *PS: Political Science and Politics* 30 (2): 213. doi:10.2307/420498.

**Assignment: Write 4 paragraphs, of no more than 250 words each, in which you articulate 4 different potential research questions.**

### Thursday, February 13

#### LITERATURE REVIEW

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTERS 3-4]

Boote, David N., and Penny Beile. 2005. "Scholars before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation." *Educational Researcher* 34 (6): 3–15.

Knopf, Jeffrey W. 2006. "Doing a Literature Review." *PS: Political Science & Politics* 39 (01): 127–32.

McCubbins, Mathew D., Roger G. Noll, and Barry Weingast. 2009. "Administrative Procedures as Instruments of Political Control." *Rational Choice Politics* 111 (2): 50.

**Assignment: Construct a bibliography of no fewer than 15 sources that would be appropriate to review for one of the research questions you wrote the previous week.**

### Thursday, February 20

#### THEORY BUILDING

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTER 5]

Bendor, Jonathan, and Terry M. Moe. 1985. "An Adaptive Model of Bureaucratic Politics." *The American Political Science Review* 79 (3): 755. doi:10.2307/1956842.

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTERS 3, 5, & 6]

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press. [CHAPTER 2]

**Assignment: For the research question for which you wrote a bibliography last week, write a brief essay that develops a theoretical framework for understanding the research question. The theory should be parsimonious, grounded in literature, backed by logic, and offer explanation.**

### Thursday, February 27

#### MODELS AND CAUSAL INFERENCE

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTERS 8 & 9]

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press. [pp. 75-99]

Kuhn, Thomas S. 2012. *The Structure of Scientific Revolutions: 50th Anniversary Edition*. University of Chicago Press. [CHAPTER 2: on Blackboard]

**Assignment: Find three examples of causal statements. These could be in journal articles, books, editorials, infomercials, or whatever. They don't need to be about politics, they just need to be a causal claim. For each one, evaluate and critique it. What evidence or logic is offered for the claim? Where does it potentially fail the rules of logic or the properties of having proven its causal claim?**

#### HYPOTHESES AND FALSIFICATION

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTER 5]

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTER 4]

King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press. [pp. 99-114]

Moe, Terry M. 1985. "Control and Feedback in Economic Regulation: The Case of the NLRB." *The American Political Science Review* 79 (4): 1094. doi:10.2307/1956250.

**Assignment: Write an essay with four bad hypotheses. For each hypothesis, explain why it is bad. These can be hypotheses found in the wild, or ones that you generate.**

**Thursday, March 12—No Class Tonight—SPRING BREAK**

**Thursday, March 19**

FIELD EXPERIMENTS

Druckman, James N., Donald P. Green, James H. Kuklinski, and Arthur Lupia. 2006. "The Growth and Development of Experimental Research in Political Science." *American Political Science Review* 100 (04): 627–35.

Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTER 10]

Kalla, Joshua L., and David E. Broockman. 2015. "Campaign Contributions Facilitate Access to Congressional Officials: A Randomized Field Experiment." *American Journal of Political Science*, April, n/a – n/a. doi:10.1111/ajps.12180.

Kanthak, Kristin, and Jonathan Woon. 2015. "Women Don't Run? Election Aversion and Candidate Entry." *American Journal of Political Science* 59 (3): 595–612. doi:10.1111/ajps.12158.

Nickerson, David W. 2008. "Is Voting Contagious? Evidence from Two Field Experiments." *American Political Science Review* 102 (01): 49–57. doi:10.1017/S0003055408080039.

**Thursday, March 26. \*\* NO CLASS MEETING THIS WEEK\*\***

**Thursday, April 2**

CASE STUDIES

Achen, Christopher H., and Duncan Snidal. 1989. "Rational Deterrence Theory and Comparative Case Studies." *World Politics* 41 (02): 143–69. doi:10.2307/2010405.

Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTER 7]

Geddes, Barbara. 1990. "How the Cases You Choose Affect the Answers You Get: Selection Bias in Comparative Politics." *Political Analysis*, 131–50.

Gerring, John. 2004. "What Is a Case Study and What Is It Good For?" *American Political Science Review* 98 (02): 341–54.

Ostrom, Elinor. 2014. "Collective Action and the Evolution of Social Norms." *Journal of Natural Resources Policy Research* 6 (4): 235–52. doi:10.1080/19390459.2014.935173.

Yin, Robert K. 2013. *Case Study Research: Design and Methods: Design and Methods*. SAGE Publications. [CHAPTER 2: on Blackboard]

**Assignment: Experimental design short essay due today.**

**Thursday, April 9**

#### SURVEY RESEARCH

- Berinsky, Adam J. 2004. "Can We Talk? Self-Presentation and the Survey Response." *Political Psychology* 25 (4): 643–59.
- Brady, Henry E. 2000. "Contributions of Survey Research to Political Science." *PS: Political Science & Politics* 33 (01): 47–58.
- Converse, Jean M., and Stanley Presser. 1986. *Survey Questions: Handcrafting the Standardized Questionnaire*. SAGE. [CHAPTERS 1 & 2, on Blackboard]
- Johnson, Janet Buttolph, and H. T. Reynolds. 2012. *Political Science Research Methods*. CQ Press. [CHAPTERS 7 & 10 available on Blackboard]
- Link, M. W., M. P. Battaglia, M. R. Frankel, L. Osborn, and A. H. Mokdad. 2007. "Reaching the U.S. Cell Phone Generation: Comparison of Cell Phone Survey Results with an Ongoing Landline Telephone Survey." *Public Opinion Quarterly* 71 (5): 814–39.  
doi:10.1093/poq/nfm051.

**Assignment: Write a short paper in which you develop a survey that might be conducted among GMU students. Describe the primary question. Define the population over which you seek inference. Define the sampling strategy. Develop the survey instrument and battery.**

#### **Thursday, April 16**

##### MEASUREMENT AND OBSERVATION

- Adcock, Robert. 2001. "Measurement Validity: A Shared Standard for Qualitative and Quantitative Research." In *American Political Science Association*, 95:529–46. Cambridge Univ Press. [http://journals.cambridge.org/abstract\\_S0003055401003100](http://journals.cambridge.org/abstract_S0003055401003100).
- Baglione, Lisa A. 2018. *Writing a Research Paper in Political Science: A Practical Guide to Inquiry, Structure, and Methods*. 4th edition. Thousand Oaks, California: CQ Press. [CHAPTERS 8 & 9]
- Gerring, John. 2011. *Social Science Methodology: A Unified Framework*. Cambridge University Press. [CHAPTER 7]
- Johnson, Janet Buttolph, and H. T. Reynolds. 2012. *Political Science Research Methods*. CQ Press. [CHAPTER 5 available on Blackboard]
- King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press. [CHAPTERS 4 & 5]

**Assignment: During this week, develop a short paper in which you describe how you would measure an abstract concept. Define the concept and the measurement strategy.**

#### **Thursday, April 23**

##### GAME THEORY

- Fink, Evelyn C., Scott Gates, and Brian D. Humes. 1998. *Game Theory Topics : Incomplete Information, Repeated Games, and N-Player Games*. Sage University Papers. Quantitative Applications in the Social Sciences. Thousand Oaks, Calif: SAGE Publications, Inc. [AVAILABLE THROUGH GMU LIBRARY ON-LINE]
- Morrow, James D. 1994. *Game Theory for Political Scientists*. Princeton University Press. [CHAPTERS 1-3, on Blackboard]

**Assignment: Case study design short essay due today.**

**Optional Assignment: See problem set posted on Blackboard**

**Thursday, April 30**

INTERDEPENDENCE, NETWORKS, AND LEVELS OF ANALYSIS

- Borgatti, Stephen P., Martin G. Everett, and Jeffrey C. Johnson. 2013. *Analyzing Social Networks*. SAGE. [CHAPTERS 1-3, on Blackboard]
- Christakis, Nicholas A., and James H. Fowler. 2009. *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*. Little, Brown. [CHAPTERS 1 & 2, on Blackboard]
- Montgomery, Jacob M., and Brendan Nyhan. 2017. “The Effects of Congressional Staff Networks in the US House of Representatives.” *The Journal of Politics* 79 (3): 745–61. <https://doi.org/10.1086/690301>.
- Victor, Jennifer Nicoll, Alexander H. Montgomery, and Mark Lubell. 2017. “Introduction,” September. <https://doi.org/10.1093/oxfordhb/9780190228217.013.1>. [Available on Blackboard on through GMU library.]

**Thursday, May 7, 2020**

STUDENT PRESENTATIONS OF FINAL PAPERS