PSCI-3105: Designing Social Inquiry

University of Colorado Boulder

Fall 2017

Time: Tuesday and Thursday, 2:00-3:15
Location: MUEN E113

Instructor: Dr. Andrew Q. Philips
Office: KTCH 144
Email: andrew.philips@colorado.edu
Office hours: Tuesday 3:30-5:30 or by appointment

COURSE DESCRIPTION: This course is designed to introduce you to the types of research design and quantitative methodology used in applied political science research. In this class we will cover topics such as building theories, hypothesis testing, measurement, and causation. Some of the class will be spent analyzing, understanding and critiquing the research design of actual political science articles. This course will also provide an overview of some of the most popular approaches to social science research, such as multivariate regression, experiments, and qualitative designs.

By the end of this course you should be able to:

- Understand some of the major approaches to research design in political science.

- Apply what you have learned to produce a written research paper that answers a relevant social science question.

- Be a savvy consumer of data and statistics in the news, media, web, etc.

PREREQUISITES: We will use some R in this course, which should be familiar to you from PSCI 2075 (the required prerequisite course). Early in the course we will review R. For the actual research paper later in the semester, students should use whatever software they feel most comfortable with (e.g., R, Stata, SPSS, Excel).

GRADES: Course grades will be based on the following. Participation is worth 10% of the final grade. There will be three tests throughout the semester, each worth 15%. About halfway through the semester, a research paper outline will be due, which is worth 10%. The paper itself is due at the end of the semester and is worth 25%. Last, presentation of the research paper will be worth 10%.

<div align="center">Grade Breakdown</div>

Participation	10%
Exam I	15%
Exam II	15%
Exam III	15%
Research Paper Outline	10%
Original Research Paper	25%
Presentation of Research Paper	10%

The following scale will be used to turn numerical grades into letter ones. Note that I will round up a letter should your grade fall on the number (but on or above 0.5) between two letters (e.g., 89.5 up to 90 rounds up to an A-). There are no opportunities for extra credit.

Grade Scale

A	95-100
A-	90-94
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D+	67-69
D	64-66
D-	60-63
F	0-59

Participation: Participation is an integral component of undergraduate courses. Students are expected to come to every class *having already read the assigned readings for that day*, and should be prepared to discuss them. Some of the course material covers difficult topics, so please stop me if you have any questions.

Exams: There will be three in-class exams held throughout the semester. These are cumulative, but will mostly focus on what we have covered in class recently. I will provide study guides before each exam, and will allocate some class time towards answering questions on the class day before the exam.

Research Paper, Outline, and Presentation: The largest graded portion of the class revolves around a research paper, to be written (and presented) towards the end of the semester. This will involve choosing an important research question to answer. This paper will be in the format of most social science papers (e.g., introduction, literature review, theory, hypotheses, testing of hypotheses, discussion and conclusion). Throughout the semester, we will craft your research paper using an outline (due about halfway through the semester) and a discussion on appropriate data sources from which to test your empirical expectations. Papers will be due near the end of the semester, and part of your final grade will involve giving a short ($\sim$5-10 minute) presentation of your findings. We will discuss the research paper, outline, and presentation more fully during the first days of class.

Contact and Office Hours: My office hours are Tuesdays 3:30-5:30. If there is a schedule conflict, we can also meet by appointment (but you *must email me at least 24 hours in advance*). I encourage you to come by office hours if you need help in the class; this is especially important early in the semester since we build upon what we have learned throughout the course. If you send me an email you can expect a response within 24 hours on business days. My email is: andrew.philips@colorado.edu.

Attendance and Late Policy: Attendance is a key component of succeeding as an undergraduate. I provide slides for each class, but we will have a much more comprehensive discussion than what appears on the slide. Attendance is mandatory, with the exception of university-excused absences.

Assignments are due on the day listed in the syllabus. Late assignments will be assessed a 10 point penalty per day (i.e., a paper scoring a 95 would receive an 85 if turned in one day late, 75 if two days,...). Assignments not turned in after 3 days will receive a score of zero.

Required Texts: There is only one required text for this course. Any additional readings will be made available to you on the first day of class or as needed. I will put all additional readings on the D2L course website: https://learn.colorado.edu/d2l/home/222264.

- Kellstedt, Paul and Guy D. Whitten. 2013. *The fundamentals of political science research*. Cam-

bridge University Press. 2nd edition. ISBN: 1107621666.

Note that it is expected to read the week's required readings *before* coming to class.

Tentative Schedule: Below is the schedule. Note that this is subject to change (see the "Syllabus Changes" section)

Tuesday, Aug 29:

Syllabus and course overview

Required Readings:

- None

Thursday, Aug 31:

How do we study politics?

Required Readings:

- *The fundamentals of political science research* (henceforth FPSR), Chapter 1

Tuesday, Sept 5:

What is a theory?

Required Readings:

- FPSR Chapter 3

Thursday, Sept 7:

Review of R, introduction to probability theory and statistics

Required Readings:

- FPSR Ch. 6
- Philips, Andrew Q. 2017. "R: A brief introduction"

Suggested Readings:

- Venables, W. N., D. M. Smith, and the R Core Team. 2017. "An introduction to R."

Tuesday, Sept 12:

Probability theory and statistics (continued)

Required Readings:

- None

Thursday, Sept 14:

Causality and the four causal hurdles, research design

Required Readings:

- FPSR Ch. 4

Tuesday, Sept 19:

Measurement and knowing your data

Required Readings:

- FPSR Ch. 5
- Geddes, Barbara. 1991. "How the cases you choose affect the answers you get: Selection bias in comparative politics." *Political Analysis* 2: 131-150.
- *The Economist*. "Is pregnancy in America much deadlier than in other rich countries?" Available at: https://www.economist.com/news/united-states/21725832-question-harder-answer-you-might-think-pregnancy-america-much-deadlier.

Thursday, Sept 21:

Statistical significance and hypothesis testing

Required Readings:

- FPSR Ch. 7
- Gelman, Andrew and Hal Stern. 2006. "The difference between 'significant' and 'not significant' is not itself statistically significant." *The American Statistician* 60(4): 328-331.

Recommended Readings:

- *The Economist*. "Are results in top journals to be trusted?" Available at: https://www.economist.com/blogs/freeexchange/2016/01/fudging-hell.

Tuesday, Sept 26:

Exam I

Thursday, Sept 28:

Bivariate regression, interpretation

Required Readings:

- FPSR Ch. 8

Tuesday, Oct 3:

Multiple regression

Required Readings:

- FPSR Ch. 9

Thursday, Oct 5:

Regression diagnostics and violations of the regression assumptions

Required Readings:

- FPSR Ch. 10 (pp. 232-244)

Tuesday, Oct 10:

Dichotomous and categorical variables

Required Readings:

- FPSR Ch. 10 (pp. 220-228)

Thursday, Oct 12:

Conditional effects and interactions. **Discussion of research paper outline**

Required Readings:

- FPSR Ch. 10 (p. 229)
- Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding interaction models: Improving empirical analyses." *Political Analysis* 14: 63-82.

Tuesday, Oct 17:

Limited dependent variables

Required Readings:

- FPSR Ch. 11 (pp. 247-254)

Thursday, Oct 19:

Visual display of information. **Research paper outline due**

Required Readings:

- Kastellec, Jonathan P. and Eduardo L. Leoni. 2007. "Using graphs instead of tables in political science." *Perspectives on Politics* 5(4):755-771.
- *Skim:* Wickham, Hadley. 2010. "A layered grammar of graphics." *Journal of Computational and Graphical Statistics* 19(1):3-28.

Tuesday, Oct 24:

Exam II

Thursday, Oct 26:

Datasets, cleaning and working with data

Required Readings:

- Herrera, Yoshiko and Devesh Kapur. 2007. "Improving data quality: Actors, incentives, and capabilities." *Political Analysis* 15(4): 365-386.

Tuesday, Oct 31:

Writing a research paper

Required Readings:

- FPSR Ch. 12 (pp. 273-280)
- George Orwell, "Politics and the English Language"

Thursday, Nov 2:

Writing a research paper (continued)

Required Readings:

- FPSR Ch. 12 (pp. 281-292)
- McCloskey, Donald. 1985. "Economical writing." *Economic Inquiry* 24(2): 187-222.
- *The Economist*. "Signifying nothing?" Available at: http://www.economist.com/node/2384590.

Tuesday, Nov 7:

Time series

Required Readings:

- None, but you may want to browse through this free e-book on time series analysis in R: https://a-little-book-of-r-for-time-series.readthedocs.io/en/latest/index.html

Thursday, Nov 9:

Experiments

Required Readings:

- Gerber, Alan S. and Donald P. Green. 2000. "The effects of canvassing, telephone calls, and direct mail on voter turnout: A field experiment." *American Political Science Review* 94(3): 653-663.
- Olken, Benjamin A. 2007. "Monitoring corruption: Evidence from a field experiment in Indonesia." *Journal of Political Economy* 115(2): 200-249.

Tuesday, Nov 14:

Potential outcomes framework and causal inference

Required Readings:

- http://egap.org/methods-guides/10-things-you-need-know-about-causal-inference

Suggested Readings:

- Stuart, Elizabeth A. 2010. "Matching methods for causal inference: A review and a look forward." *Statistical Science* 25(1): 1-21.

Thursday, Nov 16:

Causal inference (continued)

Required Readings:

- Angrist, Joshua D. 1990. "Lifetime earnings and the Vietnam era draft lottery: Evidence from Social Security administrative records." *The American Economic Review* 80(3): 313-336.

Nov 21 and 23:

No Class; Fall/Thanksgiving Break

Tuesday, Nov 28:

Qualitative research design, case studies, and multi-method approaches

Required Readings:

- Gerring, John. 2004. "What is a case study and what is it good for?" *American Political Science Review* 98(2):341-354.
- Harding, David J., Cybelle Fox and Jal D. Mehta. 2002. "Studying rare events through qualitative case studies: Lessons from a study of rampage school shootings." *Sociological Methods and Research* 31(2): 174-217.

Recommended Readings:

- Mahoney, James and Gary Goertz. 2006. "A tale of two cultures: Contrasting quantitative and qualitative research." *Political Analysis* 14(3): 227-249.

Thursday, Nov 30:

Paper workshop class day. **Exam III review**

Tuesday, Dec 5:

Exam III

Thursday, Dec 7:

Course conclusion; big ideas in political science. **Research papers due by 11:59pm**

Required Readings:

- Browse through https://en.wikipedia.org/wiki/Outline_of_political_science, which has a nice overview of the major fields in political science.

Recommended Readings:

- Any of the *Oxford Handbooks of Political Science* (Political Methodology, Comparative Politics, Law and Politics, International Relations,...etc.) edited by Robert E. Goodin, for more in-depth coverage of particular fields..

Tuesday, Dec 12:

Presentation Slot I

Thursday, Dec 14:

    Presentation Slot II

STATEMENT ABOUT 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 contact Disability Services—either online at http://www.colorado.edu/disabilityservices/—or at the Center for Community, N200, 107 UCB.

    To best accommodate students who may require alternative services, it is crucial that you contact me *early in the semester* if you need such accommodations.

HONOR CODE, COPYRIGHT, AND PLAGARISM STATEMENTS

"*On my honor, as a University of Colorado Boulder student, I have neither given nor received unauthorized assistance*"

    The CU Honor Code is intended to uphold the intellectual reputation of the university by establishing trust among individuals regarding intellectual honesty. As the website states, "The Honor Code secures an environment where academic integrity can flourish and aims to install the principles of honesty, trust, fairness, respect, and responsibility as essential features of the University of Colorado Boulder campus". Violations of intellectual honesty include plagiarism, cheating, and the unauthorized use of materials, all of which erode trust among individuals. If you have any questions about this, please see me, the Honor Code website (http://www.colorado.edu/honorcode/), or the Honor Code Office (1B70 Regent Admin Building).

    The handouts and lectures used in this course are copyrighted. By "handouts," I mean all materials generated for this class, which include but are not limited to syllabi, exams, in-class materials, and review sheets. Because these are copyrighted, you do not have the right to copy them or distribute them to others outside class, unless I expressly grant permission. In addition, I do not grant permission to tape class lectures.

SYLLABUS CHANGES

I reserve the right to make changes to the syllabus during the course of the semester as needed and will make the most updated copy available to you and announce said changes during class.

Last updated: August 22, 2017