Introduction to Empirical Analysis and Quantitative Methods, PS 3

Fall 2019
Tu-Th 2-3:30pm, Hertz 320
Version 9/2/2019

Professor Jason Wittenberg
732 Barrows Hall
Office hours: Wed 11:30am-1pm
Email: witty@berkeley.edu

Course Description

This course provides an overview of some of the methods employed in political science research. Its purpose is to familiarize you with the scientific study of politics, and to teach you how to pose and answer empirical research questions using appropriate evidence and arguments. Along the way we will learn about how to formulate and evaluate theories, how to design research to discover whether a particular theory holds up empirically, and some basic research strategies. By the end of the course you should have the tools to critically evaluate the kinds of social science arguments found in everyday life and be able to conduct your own independent research.

Prerequisites

There are no prior course requirements other than high school level mathematics.

Course Objectives

After successfully completing this course, you will be able to:

- Distinguish among different types of social science methodologies
- Solve basic 2x2 games
- Describe the logic of the experimental method
- Interpret basic descriptive statistical results

- Formulate and test hypotheses
- Explain and apply bivariate OLS regression

Instructor Information, Contact, Office Hours, & Communication

Course Instructor

Jason Wittenberg, 732 Barrows Hall.
Office hours Wednesdays 11:30am-1pm
witty@berkeley.edu

Graduate Student Instructors (GSIs)

While the instructor will interact with the whole class and will oversee all activities and grading, as well as being available to resolve any issues that may arise, the GSIs will be your main point of contact. Your GSIs are responsible for assisting you directly with your questions about assignments and course requirements.

GSI Office Hours

The GSIs will offer weekly office hours. While these office hours are optional, they can be valuable for discussion, answering questions, and reviewing for exams. Exact times and locations will be announced.

Course Mail

Make sure to check the Course Mail for messages from the instructor. You can access course email within the Learning Management System by clicking on the Inbox link or choose to have your course mail forwarded to your personal email account or your cell phone.

Question & Answer Forum

There will be a weekly forum for posing questions to one another about the lecture, section, and homework. **The instructor and GSIs will monitor this forum,** but you should also feel free to reply to other students' queries. This helps to create a general FAQ so that all students in the course may benefit from the exchange. Being a good citizen by participating can also, on the margin, help your grade.

Course Materials and Technical Requirements

Required Materials

- Paul M. Kellstedt and Guy D. Whitten, The Fundamentals of Political Science Research. Third Edition. Cambridge: Cambridge University Press, 2018. (Note: The first and second editions of this book are floating around. I cannot say how the third edition differs from the first two. However, the lectures, assignments, and exams assume the third edition.)
- iClicker+ ISBN 9781319149246

- Other readings for this course will be available on bCourses.

You are free to purchase your textbooks from any vendor. Please be sure to thoroughly review the return policies before making a purchasing decision as UC Berkeley does not reimburse students for course materials in the event of a textbook change or an unexpected cancellation or rescheduled course section.

Technical Requirements

If you are having technical difficulties with bCourses please alert one of the GSIs immediately. However, understand that neither the GSIs, nor the professor can assist you with technical problems. You must call or email tech support and make sure you resolve any issues immediately.

Extensions and late submissions will not be accepted due to "technical difficulties."

Learning Activities

Sections

For grading purposes, each of you has been assigned to one of the course GSIs and placed within his/her section. Your particular GSI will grade all of your work, as well as that of your section-mates, and engage with you in discussions. Section dates and times are below:

Sect #	Time	Location	GSI	Email
101	M 10-12am	587 Barrows	Sarah Lee	lee.sarah@
102	F 8-10am	102 Latimer	Ritika Goel	ritika_goel@
103	M 12-2pm	B51 Hildebrand	Sarah Lee	lee.sarah@
104	Tu 8-10am	182 Dwinelle	Otto Kienitz	ojk@
105	Tu 10-12pm	136 Barrows	Alia Braley	alia_braley@
106	Tu 12-2pm	151 Barrows	Alia Braley	alia_braley@
107	W 8-10am	166 Barrows	Otto Kienitz	ojk@
108	W 2-4pm	587 Barrows	Rachel Fisher	rachelfisher@
109	W 4-6pm	175 Barrows	Rachel Fisher	rachelfisher@
110	Th 8-10am	109 Dwinelle	Ritika Goel	ritika_goel@
111	F 10-12pm	175 Barrows	Pranav Gupta	pranavgupta@
112	M 12-2pm	185 Barrows	Pranav Gupta	pranavgupta@

Multimedia Lectures

I will lecture twice a week except on exam weeks, but there are also some recorded lectures to support your readings and assignments. These are listed as "Digital Media" on the syllabus. Please note that the in-class lectures will usually contain more material than the recorded lectures, even if they cover similar material.

Homework - 20%

There will be nine short homework assignments and one ungraded self-assessment quiz that put the lessons into practice. Some questions will assess basic conceptual understanding, and require short essay-type responses (typically no more than a page). Others will assess how well you can apply the techniques we learn, and require solving problems. To achieve full credit on these problems you will need to both have the correct answer and show the steps you took to reach it. There may also be multiple choice questions in which you will not need to show how you got your answer. Assignments will be

posted at the beginning of the week, and are due at the beginning of lecture (2pm) the following Tuesday.

Participation - 20%

You participation grade depends contains two components. The first and most important (80% of the total) is section attendance and participation. Your GSI will fill you in on the details. The second is clicker participation during lecture. Please note that your clicker grade will be based solely on participation, and not whether or not you get the correct answer to a given question.

Midterms - 40%

There will be two closed book in-class midterms, to be held Oct 3 and Nov 7. The exams will consist of problems that are designed to assess your understanding of core concepts and ability to solve problems and interpret your solutions.

Final Exam - 20%

There will be a 2-hour closed book final exam on Tuesday, Dec 17, 9-11am. (NOTE THAT THE EXAM IS 2 HOURS AND THE START TIME IS 9am.)

Grading and Course Policies

Students are expected to attend lecture, do the assigned reading, complete all exams and homework, and participate in discussions. The course grade will be based on two in-class midterms, a final exam, homework assignments, and course participation. The course grade will be determined based on the following formula:

Category	Percentage of Grade
Participation (Section 80%/Clicker 20%)	20%
Midterms	40%
Homework	20%
Final Exam	20%

Late Work Policy

Late work will be penalized 10% per late day or portion thereof, and will not be graded if turned in more than two days late. Extensions will not be granted without proof of a legitimate medical or personal reason.

Course Policies

Promptness

Homework assignments all have specific due dates and times. You will not receive full credit if assignments are submitted after the indicated deadline.

Honor Code

The student community at UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The expectation is that you will adhere to this code.

Collaboration and Independence

Reviewing lecture and reading materials, studying for exams, and discussing homework problems can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, homework assignments and online exams are to be completed independently and materials submitted as homework should be the result of one's own independent work.

Cheating

A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating will receive a failing grade in the course and will also be reported to the University Center for Student Conduct.

Plagiarism

To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism and how to avoid it, explore the resources linked below:

UC Berkeley Library Citation Page, Plagiarism Section

GSI Guide for Preventing Plagiarism

Academic Integrity and Ethics

Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing - furthering knowledge for the benefit of humanity.

Incomplete Course Grade

Students who have substantially completed the course but for serious extenuating circumstances, are unable to complete the final exam, may request an Incomplete grade. This request must be submitted in writing or by email to the GSI and course instructor. You must provide verifiable documentation for the seriousness of the extenuating circumstances. According to the policy of the college, Incomplete grades must be made up within the first three weeks of the next semester, though the instructor will consider exceptions.

Students with Disabilities

If you are requiring course accommodations due to a physical, emotional, or learning disability contact the UC Berkeley's Disabled Students' Program (DSP).

Notify the instructor and GSI through course email and inform them which accommodations you would like to use.

End of Course Evaluation

Before your course end date, please take a few minutes to participate in our Course Evaluation to share your opinions about this course. You will be receiving the Course Evaluation via email. The evaluation does not request any personal information, and your responses will remain strictly confidential. You may only take the evaluation once.

Rules of the Road

1. I realize we live in a wired world, but personal technology is a distraction during lecture and section. Please keep your laptops,

smartphones, and other electronic gadgetry off during lecture and section. For note-taking you will need to bring paper and a writing implement. If you have a disability that necessitates electronic assistance, please see the instructor to request an exception. A DSP note will be required.

2. I do not post what passes for my lecture notes online, but lecture slides will be available on bCourses.
3. I do not allow anyone to make announcements to the class regarding any activity not related to our course.
4. I do not hand out study sheets before exams. Part of mastering the material is learning to distinguish between important themes and incidental facts, a process your GSIs and I are happy to assist you with. Of course we will have review sessions, and are open to all questions. For exams you will be allowed to bring a hand calculator.
5. Please report any suspected errors in the grading of an assignment within two days of receiving the grade. I reserve the right not to effect a grade change if an issue is reported after two days have passed.
6. Syllabi are wonderful documents with lots of information on the time and place of office hours, the dates of exams, and course requirements. Please do not ask for information contained in the syllabus.
7. Unless otherwise specified no appointment is necessary to come to my office hours. Just come! If you are having problems with the material I encourage you to visit your GSI and me during office hours.

Course Outline

Week 1, Aug 28: Hand out syllabus; course logistics

Week 2, Sept 2-4: Studying Politics Scientifically

Digital Media:

- What is a scientific approach?
- Generating scientific knowledge
- Inductive theory building

Readings:

- Kellstedt and Whitten, Chapter 1.
- John H. Kranzler, Statistics for the Terrified. Third Edition. Prentice Hall, 2003, pp. 8-16.
- George Will, "Democracy in Iraq Isn't So Far-Fetched", The NJ Press of Atlantic City, September 8, 2003.

Assignments:

- Homework W2 due Sept 10 in hard copy at 2pm.

Week 3-4, Sept 10-12; 17: DEDUCTIVE THEORY BUILDING

Introduction and Illustrations (Sept 10-12)

Digital Media:

- Deductive theory building
- Illustrations: 2 and 3 party systems
- Implications for voting systems and legislative decision-making

Readings:

- Kellstedt and Whitten, Chapter 2, sections 2.1 through 2.5.
- Gary King, Robert O. Keohane, and Sidney Verba, Designing Social Inquiry. Princeton: Princeton University Press, 1994, pp. 14-19.
- Earl Babbie, The Practice of Social Research. Eleventh Edition. Thomson-Wadsworth, 2007, pp. 51-55.
- Kenneth A. Shepsle, Analyzing Politics. Second Edition. Norton 2010, pp. 1-30; 53-56.

Spatial Voting (Sept 17)

Digital Media:

- Downsian assumptions and mechanism
- Interpreting the result
- How well does the model explain party politics?

Readings:

- Kellstedt and Whitten, Chapter 2, sections 2.6 through 2.8.
- Anthony Downs, An Economic Theory of Democracy. New Haven: Yale University Press, pp. 3-14; 21-35.
- Donald Green and Ian Shapiro, Pathologies of Rational Choice. New Haven: Yale University Press, 1994, pp. 151-153.

Assignments:

- Homework W3-4 due Sept 19 in hard copy at 2pm.

Week 4-5, Sept 19; 24-26: Game Theory

Digital Media:

- Basic concepts
- Prisoners dilemma game
- Examples: Arms races, cartel behavior
- Assurance game
- Chicken game

Readings:

- Avinash Dixit and Susan Skeath, Games of Strategy. New York and London: W.W. Norton, 1999, pp. 1-13, 15-32, 79-87, 97-99, 107-112.
- Kenneth A. Shepsle, Analyzing Politics. Second Edition. Norton 2010, pp. 159-163; 231-241; 245-253.

Assignments:

- Homework W4-5 due Oct 1 in hard copy at 2pm.

Week 6, Oct 1: Midterm Review
Week 6, Oct 3: Midterm

Week 7, Oct 8-10: Causality

Digital Media:

- Thinking about causality
- Rules for constructing causal theories
- Hurdles to cross for a causal relationship
- Examples

Readings:

- Kellstedt and Whitten, Chapter 2, sections 2.9 and 2.10 (and list of concepts).
- Gary King, Robert O. Keohane, and Sidney Verba, Designing Social Inquiry. Princeton: Princeton University Press, 1994, pp. 99-114.
- Patrick J. Lyons, "You Gotta Believe", The New York Times, July 4, 1997.
- Sheryl Gay Stolberg, "Science, Studies, and Motherhood", The New York Times, April 22, 2001.

- Kellstedt and Whitten, Chapter 3.
- John Allen Paulos, "Do Concealed Guns Reduce Crime?", ABCNews.com March 1, 2009.
- Henry Brady et al., "Law and Data: The Butterfly Ballot Episode", PS: Political Science and Politics, 34:1, 2001, pp. 59-69.

Assignments:

- Homework W7 due Oct 15 in hard copy at 2pm.

Week 8, Oct 15-17: Research Design

Experiments (Oct 15)

Digital Media:

- Why the need for a research design?
- Basics of experimental design
- Drawbacks to experiments

Readings:

- Kellstedt and Whitten, Chapter 4, sections 4.1 and 4.2.
- Alan Krueger, "Turning Out the Vote", The New York Times, October 14, 2004.
- Susan D. Hyde, "The Observer Effect in International Politics: Evidence from a Natural Experiment," World Politics 60, Oct 2007, pp. 37-63.

Observational Studies (Oct 17)

Digital Media:

- Basics of observational studies
- Weaknesses of observational designs
- Which design to use?

Readings:

- Kellstedt and Whitten, Chapter 4, sections 4.3 and 4.4
- Raj Chetty, "Yes, Economics is a Science", The New York Times, October 21, 2013.

Assignments:

- Homework W8 due Oct 22 in hard copy at 2pm.

STATISTICAL METHODS

Week 9, Oct 22-24: Conceptualization, Measurement, Description

Digital Media:

- Measurement metrics
- Measures of central tendency and dispersion
- Examples

Readings:

- Kellstedt and Whitten, Chapter 5, Chapter 6 through middle of page 133.
- Malcolm Gladwell, "Examined Life: What Stanley Kaplan Taught us about the SAT," The New Yorker, Dec 17, 2001.
- Alan B. Krueger and David Laitin, "Faulty Terror Report Card," Washington Post, May 17, 2004, p. A21.
- Pamela Paxton, "Women's Suffrage in the Measurement of Democracy: Problems of Operationalization," Studies in Comparative International Development, fall 2000, vol. 35, no. 3, pp. 92-111.
- John H. Kranzler, Statistics for the Terrified. Third Edition. Prentice Hall, 2003, pp. 49-63.

Assignments:

- Homework W9 due Oct 29 in hard copy at 2pm.

Week 10, Oct 29-31: Statistical Inference

Digital Media:

- Populations, samples, and the Normal distribution
- The Central Limit Theorem
- Applications

Readings:

- Kellstedt and Whitten, Chapter 7.
- Kranzler, pp. 115-121.
- "The Economist: Counting the casualties", The Economist, November 6, 2004.
- Charles Wheelan, Naked Statistics, Chapters 8-9.

Assignments:

- Homework W10 due Nov 5 in hard copy at 2pm.

Week 11, Nov 5: Midterm Review

Week 11, Nov 7: Midterm

Week 12, Nov 12-14: Hypothesis Testing

Digital Media:

- Evaluating bivariate relationships
- Two categorical variables
- Continuous DV and categorical IV

Readings:

- Kellstedt and Whitten, Chapter 8.
- Kranzler, pp. 123-127.

Assignments:

- Homework W12 due Nov 19 in hard copy at 2pm.

Week 13-14, Nov 19-21, 26: Bivariate Regression

Digital Media:

- Basic concepts and notation
- Sample Ordinary Least Squares (OLS) model
- Inferring population values

Readings:

- Kellstedt and Whitten, Chapter 9 (but not section 9.5).
- Edward R. Tufte, Data Analysis for Politics and Policy. Prentice Hall, 1974, pp. 65-77.
- Jeffrey A. Segal and Albert D. Cover, "Ideological Values and the Votes of U.S. Supreme Court Justices", American Political Science Review, Vol. 83, No. 2, June 1989, pp. 557-565.

Assignments:

- Homework W13-14 due Dec 3 in hard copy at 2pm.

Week 15, Dec 3-5: Multivariate (Multiple) Regression

Digital Media:

- The problem of confounding variables
- Application to predicting incumbent vote share

Readings:

- Kellstedt and Whitten, Chapter 10, sections 10.1-10.4

Assignments:

- An ungraded self-assessment quiz will be available

Week 16, Dec 10: Review Session

Final Exam Group 5: Tuesday, Dec 17, 9-11am