

## PS 15. Introduction to Research in Political Science

Department of Political Science  
University of California, Santa Barbara  
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### Course Description

Political science is a discipline within social science that uses statistics and research design to understand and explain political phenomenon. If you want to understand and interpret political science research, you need to understand how it is done. The goal of this course is to understand the process social scientists use to test theories, and discover patterns in data.

This course teaches basic statistical techniques that are useful for describing and making inferences from data. The course will also familiarize students with R, a widely used and free statistical platform for analyzing data. By the end of the course, students should be able to understand and critique research, and perform basic statistical analyses in R.

You can only learn statistics by doing statistics. You can only learn to code by trying to code. In recognition of this fact, the homework for this course will be *extensive*, requiring students to complete 5 problem sets over the session. In addition, students will have two exams: a midterm and a final. Students must also be required to attend all sections, in addition to the twice a week lecture. In other words, this course is a significant amount of work. Ensure you have the time in your schedule this quarter to do the work necessary to excel in this course.

While this is a summer session course and takes place over the shorter six week period, its brevity is not an indication of its difficulty. We will cover the same amount of material as a typical semester course, doing so in a shorter period of time. This makes PS 15 particularly difficult during summer sessions, so please come prepared.

### Course Policies

#### *Software*

We will be using R, which is an open-source statistical package. This program requires writing code. You can download it from the web here: <http://cran.r-project.org/>

RStudio is a very useful tool that makes coding in R easier. You can download it from the web here: <https://www.rstudio.com/> - We will be using R Markdown in RStudio.

Install RStudio on your computer, if you have one, after the first lecture. You will also have access to computers with RStudio in your weekly section. Here's a helpful website to get you started: <http://statsthewayilikeit.com/r-and-rstudio-stuff/get-started-in-rstudio/>

There are lots of resources out there on R but here are a few. As always, your best resource will be your TA's and sections.

R tutorial, [tryr.codeschool.com](http://tryr.codeschool.com)

Grolemund, Garrett, and Hadley Wickham. 2017. R for data science.

Kabacoff, Robert I. 2015. *R in Action: Data Analysis and Graphics with R, Second Edition*. Shelter Island: Manning.

### Requirements & Evaluation

Problem sets (50%): There will be 5 weekly problem sets over the course of the semester. They will focus on statistics, coding in R, as well as ensuring you understand research design. These assignments will be available on Mondays at 6PM and will be due at the start of the next week, by Monday at 6:00 PM. Late problem sets will not be accepted.

Midterm (15%): A midterm will be held in class on July 18.

Final (25%): A final exam will be held on Thursday, August 2 from 7:30-10:30 pm in GIRV 1112. It will cover all the topics from the course, with greater emphasis on topics not covered in problem sets or the midterm.

Participation (10%): Students are assigned to one of four sections. You must attend these, and you must attend the section to which you are assigned. While class time will focus on conveying research methods, in section you will predominately learn and practice R. That said, section may be used for review of class concepts or background material from time to time. *Attendance will be taken and counts towards your grade.* Given the TAs have a lot to cover in every session, please arrive on time: *late arrivals will negatively affect your grade.* In addition, participation with questions and answers in the online forum will also improve your grade.

Assignment	Due Date
Problem Set 1	Monday 2 July, 6 pm
Problem Set 2	Monday 9 July, 6 pm
Problem Set 3	Monday 16 July, 6 pm
Midterm	Wednesday 18 July, IN CLASS
Problem Set 4	Monday 23 July, 6 pm
Problem Set 5	Monday 30 July, 6 pm
Final	Thursday, 2 August, 7:30-10:30 pm, GIRV 1112

### Grading

Problem sets will be graded according to the following four category scale: “check plus,” exceeds expectations; “check,” satisfies expectations; “check minus,” falls short of expectations but is minimally satisfactory; and zero for either not acceptable, late or not received. We will then translate these scores into letter grades at the end of the quarter. You

will receive letter grades for the exams in real time. The TAs will do their best to get feedback to you as soon as possible given the rushed schedule—thank you for your patience.

### Rules and Guidance on Problem Sets:

Students are encouraged to discuss challenges they encounter in solving the problem sets with each other. However, every step of every problem must be produced by the individual student, and all work must be written up independently. Neither code nor written solutions may be copied verbatim. For analytical questions, you must include your intermediate steps, as well as comments on those steps when appropriate such that we can understand your reasoning. For data analysis questions, include annotated code as part of your answers. Your problem set must list the names of any students with whom you have worked on the problems. In addition to working with your peers, if you run into trouble try googling things: there are tons of resources on the internet to help you learn statistics and R. You can also use the Gauchospace forum to post questions, which you and TAs can help answer. *If you help answer questions on the forum, this will improve your participation grade.*

Problem sets are to be written in a language called R Markdown. The problem sets on the course website will be posted online in this format. You can easily open these in the R Studio software. This will make it easy for you to write your responses in using the same formatting and language. As a result, your problem sets will automatically include the results of running your code in HTML. All problem sets will be submitted online—both the R code and the HTML—through Gauchospace.

Late problem sets will not be accepted and receive a score of zero. In extreme cases, students may obtain permission for a late submission from their TA at least three days prior to the due date. Permission cannot be obtained after the fact.

### Readings

The textbook is *Real Stats* by Michael A. Bailey. The book is available for purchase at the bookstore, online (digital copy), and one copy is on reserve at the library. A few additional readings, primarily political science research articles, will be posted on Gauchospace. These readings will help students see the ideas learned in the textbook in action, in actual political science research. It's important to read these articles: they will come up on problem sets.

Students should come to lecture prepared, having read the assigned readings for that section of the course. This approach will greatly help with understanding the material in class, and with completing weekly problem sets.

### **Course Schedule & Readings (Tentative)**

<b>Weekday</b>	<b>Date</b>	<b>Topic</b>	<b>Readings</b>
Monday	25-Jun	Introduction	
Wednesday	27-Jan	Causality	Ch 1
Monday	2-July	Data and Coding	Ch 2, Appendix pp. 521-531
Wednesday	4-July	<b>NO CLASS</b>	

Monday	9-July	Bivariate OLS	Ch 3, Wand et al. 2001
Wednesday	11-July	Hypothesis Testing	Ch 4
Monday	16-July	Hypothesis Testing	Bartels 2006
Wednesday	18-July	Midterm, OLS Intro	Ch 5
Monday	23-July	Multivariate OLS	Bateson 2012
Wednesday	25-July	Types of Variables	Ch 6 (pp. 167-190)
Monday	30-July	Experiments	Ch 10, Gerber, Green & Larimer 2008
Wednesday	1-Aug	Case Studies	Gerring 2007 (pp. 90-98, rest of chapter is optional); Seawright & Gerring 2008

### Articles (posted on Gauchospace)

Wand, J., Shotts, K., Sekhon, J., Mebane, W., Herron, M., & Brady, H. (2001). The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida. *American Political Science Review*, 95(4), 793–810.

Bartels, L. (2006). What’s the Matter with *What’s the Matter with Kansas?*. *Quarterly Journal of Political Science*, (1), 201-226

Bateson, R. (2012). Crime Victimization and Political Participation. *American Political Science Review*, 106(3), 570–587.

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(01).

Gerring, J. (2007). The Case Study: What it is and what it does. In C. Boix & S. C. Stokes (Eds.), *The Oxford Handbook of Comparative Politics*.

Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. *Political Research Quarterly*, 61(2), 294–308.

### Final Thoughts – Best Practices for Succeeding in this Course:

1. Don’t plagiarize or cheat: UCSB defines plagiarism as “the use of another’s idea or words without proper attribution or credit.” It is a serious academic offense. For this course, you may discuss problem sets with fellow students. But, in these problem sets, you must on your own put the answer to the questions down on paper in your own words. In the case of the midterm, you may not discuss the questions or your answers with others until the Friday after the midterm. You also cannot look at another person’s computer screen while they are completing the midterm. Plagiarism and other types of academic dishonesty will be reported to the Student Judicial Affairs Office for disciplinary action and will result in an automatic fail. If you are not sure what constitutes plagiarism, ask either the Professor or the TA. Also ask us for help if you’re struggling before you resort to such desperate measures.

2. Hand in all the assignments: It's best to give every assignment a try and hand it in. The vast majority of students do this. However, sometimes when a student is struggling they don't hand in any assignment. This is the easiest way to end up failing the class, or dramatically reducing your grade. So, hand in something every single time we ask, and you will be much more likely to succeed in the course.

3. Take advantage of opportunities for extra credit: If you want to improve your grade in the course, apart from putting in extra effort, attending TA office hours and the lecture, the best way to do it is by completing little extra credit questions throughout the quarter. I do not provide 'grade bumps' after the fact, so please do not ask. Instead, take advantage of the extra credit opportunities and you will get a few extra points on your final grade.

4. Study hard for the midterm and the final exam: The Professor will give lots of guidance in class on what you need to know for both of the tests. But, students still have to do the hard work of mastering this material. Put in the extra time for these two, key tests and you will succeed in the class. If you don't study, these tests will drag down your grade.

5. Take care of your health and wellness: Statistics can be hard material. You're much more likely to understand the ideas and coding if you are eating well, sleeping well and taking care of your health and wellness. Keep in mind there is a food bank on campus for students who need extra support to get healthy food: <https://foodbank.as.ucsb.edu/>. There is also a counseling service on campus, CAPS: <http://caps.sa.ucsb.edu/> and a sexual violence support center: <http://sexualviolence.ucsb.edu/>. Seek out help when you need it and support your fellow students' health and wellness if they need help.