Syllabus for PS 3: Intro. to Empirical Analysis & Quantitative Methods; Fall 2018

Personnel

Instructor: Andrew Little, 736 Barrows Hall, andrew.little@berkeley.edu
Instructor Office Hours: Wednesday 10:00am-12:00pm.
Location: Tuesday/Thursday 5:00pm - 6:29pm, 2050 Valley Life Sciences

GSIs: Chris Carter (head GSI), Rachel Fisher, Jason Poulos, Bhumi Puhorit, Dan Spokojny, Alex Stephenson
GSI Office Hours: `https://piazza.com/berkeley/fall2018/ps3/staff`

Course Goals

This course provides an overview of some of the research methods that political scientists use to draw conclusions about the political world and public policy. What makes the subject matter "empirical" is that it deals with data and events that can be observed. The purposes of the course are to equip you to better understand research and policy debates you encounter in political science classes and out in the real world, to sharpen your own ability to pose and answer research questions, and to impart skills in using some of these methods yourself.

When political scientists deal with data in research, the two major issues are determining (i) what relationships and patterns occur in the data, and (ii) determining what causes the relationships. Those are the two principal methodological problems we will confront in this course. We will use quantitative tools of statistics to ascertain relationships. We will explore several complementary methodologies — formal theory, experimentation, quantitative (statistical) analysis — to assess causation in relationships.

Upon completion of the course you will be able to critique descriptive and causal statements made about empirical relationships in political science research, public policy analysis, and everyday life. You will also be able to apply basic tools of statistical description, modeling, and inference (such as regression and hypothesis testing) to a dataset.

A Note on Course Background: A large part of the course deals with formal and quantitative analysis, which is often expressed in mathematical symbols. We will also do some statistical programming. However, the actual mathematical and programming content of this course is light and no math beyond high school algebra is required to succeed fully in this course. The problems students have more often come down to logic and grasping a style of thinking than to mathematics per se.

General Policies

How to succeed in this class

Every student at Berkeley can do well in this course. Here are some foolproof methods to make sure you do so:

1. Come to class and section. This will both mechanically increase your grade through participation, and make sure you are on the same page with the instructors.
2. Do the readings before class, take notes during class, and compare your notes to the posted slides after class.
3. Make or join a study group. There is a form on Piazza for finding others to work with.

4. Get started on problem sets when they are posted, not an hour before they are due.

Communication

Given this is a large class, I have to rely on the GSIs and technology to be able to answer questions about the course logistics and material.

We will use Piazza as a public forum for questions. This is also where readings and other announcements will be posted. If not automatically enrolled, you need to sign up for Piazza here: `piazza.com/berkeley/fall2018/ps3`

As a general rule, if you have a question that may be of interest to others in the class, your first instinct should be to post it on Piazza: we will closely monitor the forum and answer questions just as quickly as by email. For individual-specific questions (e.g., about attendance or grading) your first instinct should be to email your GSI. If you think the question is not appropriate for Piazza or your GSI, email the head GSI (christopher.carter@berkeley.edu) or instructor (andrew.little@berkeley.edu)

You are welcome to attend any of the GSI office hours, but it is better to develop a relationship with your own GSI, and so going to his or her office hours is preferable when possible.

My office hours will usually be mobbed before problem sets and exams. If for some reason you have a question that requires a one-on-one discussion, office hours not preceding problem sets and exams are usually calm enough to facilitate that, or you can email me ahead of time to set up an appointment, which I can usually arrange within a few days.

Textbook

The only text required for purchase is "The Fundamentals of Political Science Research" by Kellstedt and Whitten, **second edition**. This will be supplemented by other readings which will be distributed via Piazza.

Software

We will do some basic data work in class and on problem sets with the statistical software R. One great thing about R is that it is free!

Instructions for installing R and some add-ons we will use is here: `https://swirlstats.com/students.html`.

There are also several computer labs on campus with the appropriate software installed, for example here: `http://www.lib.berkeley.edu/libraries/data-lab`.

Attendance

We will not take attendance in lectures, but will take attendance in section. You can miss up two sections unexcused without penalty, but after that your participation grade will go down. For an absence to be excused, you need to contact your GSI *before* class with a legitimate reason.

We reserve the right to drop students from the class who do not attend section for the first three weeks.

Evaluation

Final grades will be based on the following:

- Participation 5%. This will primarily be determined by your GSI based on attendance and participation in section, but constructive participation on Piazza and in lecture will be positively noted as well.
- Problem Sets: 30%. There will be around 4 problem sets, and additional assignments for learning R with Swirl (see above).
- Midterm: 30%. The Midterm will be in class on **October 4th**. If you cannot take the exam at this time, you can not take the class.
- Final: 35%. The final will be on **Thursday, December 13**, 11:30am-2:30pm. If you can not take the exam at this time, you cannot take the class.

Late Assignments

Extensions and permission to submit late work will only be granted in extenuating and unavoidable circumstances outlined to the instructors in writing prior to the due date in question. Such circumstances include medical or family emergencies. Multiple assignments from other courses scheduled for the same date – or other work commitments – do not constitute acceptable reasons for extensions, so please plan accordingly. Late assignments will be penalized by 10% per day late.

Problem Sets and Collaboration

I encourage you to work together on the problem sets. Collaboration benefits both the receivers of help as well as the givers: being able to explain something to others is one of the best ways to truly master it. Two important guidelines for collaboration:

1. You should always spend some time trying to figure out the problems on your own before turning to others. This is both to keep a check on how well you understand the material, and because the initial stages of trying to crack a problem on your own are an important – if hard! – way on the path to understanding.
2. Your answer must be written in your own words.

Appealing Grades

If you believe your grade on an assignment does not reflect the quality of the work, you can appeal given the following guidelines:

- Wait 24 hours, but no more than a week after receiving the grade
- If you still would like to appeal, email your GSI a clear and short explanation of why you believe the grade is incorrect. If necessary, they will consult me.
- We reserve the right to give a *lower* grade following any appeal

Laptops and Other Electronic Devices

Recent research has provided strong evidence that students learn less when they have their laptops, even if just to take notes. Not only will having a laptop distract you, it also distracts those around you. (In fact, this is an excellent example of a collective action problem, one of the topics we will cover.) So, unless you have a pressing reason that is cleared by me, laptops are not to be used during class.

Similarly, phones must be turned off during class.

Accessibility Needs

If you have a condition that affects your ability to participate fully in class or to meet all course requirements (in addition to the usual DSP accommodations), please speak with me ASAP that we can work together to make appropriate arrangements. This syllabus and other course materials can be made available in alternate formats.

Schedule

Below is a broad overview of the class. A more detailed version with specific readings and assignments which will be updated throughout the semester is here: `https://goo.gl/zSXznR`

Part A: Introduction and theory

K&W Chapters 1-3, plus supplemental readings.

Part B: Basics of causal inference

K&W Chapters 3-4, plus supplemental readings

MIDTERM: 10/4 (in class)

Part C: Data, sampling, and hypothesis testing

K&W Chapters 5-7

Part D: Regression

K&W Chapters 8-10

Part E: Tying it all together: Examples of recent papers

FINAL: 12/13, 11:30am-2:30pm (location TBD)