PPHA 34600: Program Evaluation
SYLLABUS

Spring 2019: Tuesdays and Thursdays, 9:30-10:50a and 11:00-12:20p. Location TBD

Instructor: Fiona Burlig
Office: Keller Center #2055
Office hours: TBD
Email: burlig@uchicago.edu, with [PPHA34600] in the subject line

TAs: Terence Chau, email: terencechau@uchicago.edu
Office hours: TBD
Additional TAs TBD

Course description: The goal of this course is to introduce students to program evaluation and provide an overview of current issues and methods for estimating treatment impacts. We will

Prerequisites: PPHA31002 and PPHA31102 or equivalent coursework in statistics and economic theory. Students lacking these prerequisites should seek permission from the instructor.

Requirements and grading: Grades will be based on four problem sets and a final exam. Problem sets will count for a total of 75% and the final exam will count for 25%.

Problem sets: Problem sets must be typed and submitted electronically, and late problem sets will not be accepted. Each assignment will receive equal weight. You may work in groups of up to three on your problem sets, ask the course TAs, and get help from Harris’ R consultants, but you must turn in your own problem set, with answers written in your own words. All coding in problem sets must be done in R. Due dates are as follows:

- Problem Set 1: Thursday, April 18 at 9 pm.
- Problem Set 2: Tuesday, May 07 at 9 pm.
- Problem Set 3: Thursday, May 16 at 9 pm.
- Problem Set 4: Tuesday, May 28 at 9 pm.

Final exam: The take-home final exam will be due 72 hours after the assignment is made available on the last day of class. You must do your own work and may not discuss the exam with anyone before it is due. Your exam must be typed and submitted electronically. Late exams will receive a zero.

Re-grade policy: If you think that there is an error in the grading of your work, you must submit a typed written statement of the details of the problem in question to a TA attached to the assignment in question. The TAs will review both your reasoning and the problem and respond within one week. We reserve the right to re-grade the assignment in its entirety.
**Readings:** Materials for this course consist of two main items: (1) my lecture slides, which will be focused on theory, and (2) a variety of papers that will be available from the course website, which will provide examples of each method. See the schedule and reading list below for topics and associated readings.

**Additional policies:**

**Electronic devices:** This course has a no-electronic-devices-in-class policy. Please refrain from using your devices in class. If you require an exemption from this policy (e.g. for a medical reason), please seek permission from the instructor.

**Statistical software:** Data work for this class, including problem sets and/or the final exam, will be done in R. I recommend that you use RStudio in conjunction with the tidyverse.

**Academic honesty:** The Harris School has a formal policy on academic honesty that you are expected to adhere to. Examples of academic dishonesty include (but are not limited to) turning in someone else's work as your own, copying solutions to past years' problem sets, and receiving any unapproved assistance on exams. Academic dishonesty will not be tolerated in this course. At a minimum, I will give zeroes on any assignments that include cheating and will strike the highest overall problem set score of any student who has cheated. I will also refer all cases of cheating to the office of the Dean of Students. They may in turn impose further penalties as per the Harris School Disciplinary Procedures, including probation and expulsion. If you have any questions regarding what would or would not be considered academic dishonesty in this course, please do not hesitate to ask.

**ADA accommodations:** Any student who believes they may need assistance should inform the Office of Student Disability Services by the end of the first week of class. Once you have received an accommodation letter, it should be presented to the course instructor immediately. For more information, see https://disabilities.uchicago.edu/.

**Tentative list of lecture topics and deadlines (subject to adjustments):**

4/2: Why program evaluation?
4/4: Regression and the fundamental problem of causal inference
4/9: Randomized controlled trials I
4/11: Randomized controlled trials II
4/16: Randomized controlled trials III
4/18: Evaluation of evaluations
  - **Problem set #1 due**
4/23: Selection on observables I
4/25: Selection on observables II
4/30: Panel data I
5/2: Panel data II
5/7: Panel data III
  - **Problem set #2 due**
5/9: Instrumental variables I
5/14: Instrumental variables II
5/16: Regression discontinuity I
  ● Problem set #3 due
5/21: Regression discontinuity II
5/23: Big data and machine learning I
5/28: Big data and machine learning II
  ● Problem set #4 due
5/30: Does rural electrification work? I
6/4: Does rural electrification work? II
6/6: Wrapping up
  ● Final exam assigned, due on 6/9

Reading list: Readings will be made available through the course website. I’m not asking you to read much, so all readings are mandatory.

Why program evaluation?

Regression and the fundamental problem of causal inference

Randomized controlled trials I: Overview

Randomized controlled trials II: Noncompliance

Randomized controlled trials III: General equilibrium effects

Evaluation of evaluations

Selection on observables I: Adding controls

Selection on observables II: Matching

**Panel data I: Overview**

**Panel data II: Fixed effects A**

**Panel data III: Fixed effects B**

**Instrumental variables I: Compliance and measurement error**

**Instrumental variables II: IVs for causal inference**

**Regression discontinuity I: Sharp RD**

**Regression discontinuity II: Fuzzy RD**

**Big data and machine learning I: Overview**

**Big data and machine learning II: Causality**

*Does rural electrification work? I*

**Does rural electrification work? II**


**Wrapping up**