

University of Southern California
MS in Applied Economics and Econometrics

Course and Contact Information

Course ID and Title: Econ 573, Applied Program Evaluation
Semester: Fall 2022
Units: 4
Course Location: KAP 146, Tue/Thu 12-1.50pm

Instructor and Contact Information

Instructors: Erik Meijer (EM) and Geert Ridder (GR)
Office: KAP306A (GR), VPD, Room 505 (EM)
Office Hours: M, 1-2pm (GR) TH, 1-2pm (EM), or by appointment

Contact Info: ridder@usc.edu, 213-740-2432 (GR)
erik.meijer@usc.edu, 213-821-2788 (EM)

Course Description

This is an application-oriented course on the econometrics of program evaluation, where "program" often means some kind of (public) policy, but it can also be an action by a firm or an NGO program, etc. Students will be equipped with a toolkit of common econometric methods that can be used to assess the causal effect of a policy. We will explore the following topics in this course:

- Randomized experiments
- Unconfounded treatment assignment
- Difference in differences
- Synthetic control methods
- Instrumental variables
- Regression discontinuity and kinks

Instruction will consist of lectures and lab sessions in which the methods are used on data from existing programs. Assignments will be further analysis of the data sets.

Learning Objectives

Upon completion of this course, students should:

- be familiar with the most widely used econometric methods of program evaluation;
- understand the relative advantages and pitfalls of each method for different applications;
- be able to identify and use appropriate methods in their own work or research.

Prerequisite: Econ 513 (econometrics)

Recommended Preparation: Familiarity with programming in R

Course Notes

Letter grade. Course has blackboard page with lecture notes, relevant R code and data sets.

Required Readings and Supplementary Materials

Lecture notes will be provided and posted before the class on blackboard.

Required textbook:

- Angrist and Pischke, Mastering Metrics, Princeton University Press (2015) (AP)

Supplementary:

- Athey and Imbens, The Econometrics of Randomized Experiments, ArXiv (2016) (AI1)
- Athey and Imbens, The State of Applied Econometrics: Causality and Policy Evaluation,
- Journal of Economic Perspectives (2017) (AI2)
- Imbens, Matching Methods in Practice: Three Examples, Journal of Human Resources (2015) (I1)
- Abadie, Diamond, and Hainmueller, Comparative Politics and the Synthetic Control Method, American Journal of Political Science (2015) (ADH)
- Imbens and Lemieux, Regression Discontinuity Designs: A Guide to Practice, Journal of Econometrics (2008) (IL)
- Imbens, Instrumental Variables: An Econometrician's Perspective, Statistical Science (2014) (I2)
- Doudchenko and Imbens, Balancing, Regression, Difference-In-Differences and Synthetic Control Methods: A Synthesis (2016) (DI)
- Card, Lee, Pei and Weber, Regression Kink Design: Theory and Practice, Econometrica (2015) (RKD)

Description and Assessment of Assignments

Assignments are follow-up analyses of the data used in the lab sessions. Students will work in groups that we randomly create for each assignments. Assignments will be graded on a 0-100 scale. There will be 6 assignments corresponding to the 6 topics covered during the semester.

Assignments have to be typed. They have to be organized as a short memo, that states the question that is answered, the method used, the data used and the results, organized in tables and if required figures, both with comments. Code has to go in an appendix. For the preferred layout of the tables and figures consult an issue of the Journal of Economic Perspectives, accessible through the USC library.

Grading Breakdown

Grade depends on midterm, final and average homework score. Midterm and final are open book and notes. They have to be printed, i.e. not on a laptop or tablet.

Assessment Tool (assignments)	Points	% of Grade
Average grade of assignments	100	33
Midterm	100	33
Final	100	33
TOTAL		100

Letter grade reflects the student's performance relative to that of other students.

Assignment Submission Policy

Electronic submission at due date that is one week after the lab session. The work has to be submitted before the class that is one week after the lab session.

Grading Timeline

7 days.

Course Schedule: A Weekly Breakdown

Acronyms refer to required readings listed above.

	Topics/Daily Activities	Readings/Preparation	Deliverables
Week 1	Introduction, lab session on R I	AP, AI2	
Week 2	Randomized experiments I and lab session on R II	AP, AI2	
Week 3	Randomized experiments II, lab session	AI2	Assignment randomized experiment
Week 4	Unconfounded assignment I	AP	
Week 5	Unconfounded assignment II and lab session	AP, I1	Assignment unconfounded assignment
Week 6	Dif-in Dif I	AP	
Week 7	Dif-in-dif II and lab session	AP	Assignment dif-in-dif
Week 8	Synthetic control I	DI, ADH	

Week 9	Synthetic control II and lab session	DI,ADH	Assignment synthetic control
Week 10	Instrumental variables I	I2,AP	
Week 11	Instrumental variables II	I2, AP	
Week 12	Instrumental variables III and lab session	I2, AP	Assignment IV
Week 13	Regression discontinuity I	IL, AP	
Week 14	Regression discontinuity II and lab session	IL, AP	Assignment RD
Week 15	Regression kink design	RKD	
FINAL			TBD

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.