

ECON390: Topics in Applied Econometrics
Duke University, Department of Economics
Summer Term 1 2020

Instructor: Attila Gyetvai (attila.gyetvai@duke.edu)

Office hours: By appointment, via Zoom

Course website: Sakai

Overview: Assessing the effect of a new drug is conceptually simple: give some patients the drug and placebo to others, then calculate the difference in health outcomes. But how could we apply the same principle to economic policies? Gathering experimental evidence in most cases would be either costly, immoral, or infeasible. Nevertheless, economists have developed tools to evaluate the impact of socioeconomic policies using observational data. This course introduces these tools and demonstrates their use in simulated settings.

Assessment: 100% of your grade comes from a group project. During the course, you will design and simulate a hypothetical economic policy and evaluate its performance. You can work in groups of up to four people. Each group will present their policy evaluation at the end of the course.

Structure: The course is online. Interactive classes and project presentations take place via Zoom; recordings will be available for course participants. I will hold office hours online via Zoom. Groups are required to check in with me every two weeks about their progress on the project.

Materials: There is no required textbook for the course. The lectures are self-contained. If you are interested in further reading, I recommend *Mostly Harmless Econometrics* by Josh Angrist and Jörn-Steffen Pischke.

Modules

0. Challenges to identifying causal effects
1. Treatment effects
 - a. Average treatment effects
 - b. Imperfect compliance
2. Randomized controlled trials
3. Identification strategies
 - a. Matching
 - b. Regression discontinuity
 - c. Difference-in-differences
4. Statistical inference