

## Syllabus

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**Course:** *Microeconometrics*

**Professors:** Bruno Ferman

**2022 THIRD QUARTER**

### PROGRAM

This course is focused on the estimation of causal effects. We present a number of different methods that can be used to identify causal effects, potential threats to the validity of these methods, and potential alternatives for inference.

### TOPICS

#### 1) Causal Inference and Random Experiments

- Quick review of causality and potential outcomes
- Sample size, design, and power calculation
- Inference (clustering; bootstrap; randomization inference; multiple testing)
- Sampling-based vs design-based uncertainty
- Attrition and sample selection (partial identification)
- Externalities and peer effects
- Internal vs external validity

#### 2) Other methods to identify causal effects

- Matching estimators.
- Regression discontinuity
- Basics of Difference-in-Differences (more advanced topics will be covered in the mini-course by Pedro Sant'Anna).
- Iterated fixed effects and Synthetic Controls.
- Shift-share designs.
- Judge instruments.

### GRADING

Empirical projects: 100%

### PROFESSOR - EMAILS

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