

Syllabus for Advanced Econometrics II (ECON 338) - Winter 2024

Professor: Nicolas Ajzenman

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Office Hours: LEA538, Tuesdays 11 to 12 (students **must** select a slot in calendly before coming, you can come in groups of 2/3, but you must sign in so everybody has a chance):

<https://calendly.com/nicolas-ajzenman-1/30min>)

If you can't come in any of the given slots send me an email.

Required and Optional Course Material: see below

Evaluation and Grading: see below

Prerequisites: While there is no official prerequisite, you are expected to have completed ECON 337 satisfactorily.

Regular Classes: Tuesday and Thursdays 8.35 to 9.55 AM, Rutherford Physics Building 114

Description: The course aims to introduce students to the use of econometric methods, to give them an appreciation of their scope and their usefulness in securing identification of economic magnitudes, and to give them an understanding of the properties of a variety of econometric procedures in relatively simple settings. We will study the fundamental problem of causality in social science settings and study credible identification strategies of causal effects. In particular, we will introduce some of the standard estimators used for causal inference and understand their relevance in each context. You will read applied papers, besides textbooks. The course assumes that students have taken ECON 337.

E-mail policy: Short e-mails that can be answered by a yes or a no are more likely to be answered quickly. Long e-mails or e-mails requiring long responses may or may not be answered. If your question is long or requires a complex answer, please come see me during office hours.

Textbooks:

The main content of the course will be developed in the lectures. Slides will be made available after each topic has been covered. The following textbooks are useful:

- Wooldridge, J.M. (2013), **Introductory Econometrics: A Modern Approach 7th Edition, South-Western Cengage Learning, Mason.** (This will be the main textbook for the course. It provides a practical approach to econometrics, and shows how the tools of econometrics are used to address real questions in policy analysis and other areas)

- Angrist J.D. and Pischke J.S. (2009), *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton University Press, New Jersey.
- Angrist J. D. and Pischke J.F. (2015), *Mastering 'metrics: The path from cause to effect*. (This book covers key econometric tools for policy analysis using up to date, real-world examples. It is rigorous but easy to read, and uses only elementary statistics.)
- Cameron A.C. and Trivedi P.K. (2010), *Microeconometrics Using Stata* Stata Press. (This book integrates the discussion of econometric tools with their implementation in Stata, and provides a useful body of data sets and codes in Stata.)

Grade Criterion:

Letter	Points	Percent
A	4	85-100
A-	3.7	80-84
B+	3.3	75-59
B	3	70-74
B-	2.7	65-69
C+	2.3	60-64
C	2	55-59
D	1	50-54
F	0	00-49

The grade distribution will be approximately normal, centred around 70 – 74 percent. At the end of the course, if the distribution differs significantly, the instructor may exercise discretion and adjust the grade thresholds. This will not serve as grounds for grade appeals

Class by class calendar (there could be changes if we need more time for a specific topic or if I realize some topics can be covered at a faster than expected pace)

Date	Topic
January 4	<u>Introduction</u>
January 9	REVIEW: The simple regression model, properties of OLS, Functional Forms (estimation)
January 11	REVIEW: The simple regression model, properties of OLS, goodness of fit, multicollinearity
January 16	REVIEW: The simple regression model, properties of OLS, Functional Forms (estimation)
January 18	REVIEW: Inference
January 23	REVIEW: Inference
January 25	Introduction to Causality: The fundamental Problem of Causal Inference – Rubin model
January 30	Introduction to Randomized Control Trials
February 1	Introduction to Randomized Control Trials
February 6	Matching
February 8	Propensity Score
February 13	Instrumental Variables
February 15	Instrumental Variables
February 20	MID-TERM EXAM IN CLASS
February 22	Randomized Experiments with imperfect compliance: LATE
February 27	Introduction to Panel Data: Random and Fixed Effects Models
February 29	Difference-in-Differences
March 12	Difference-in-Differences
March 14	Regression Discontinuity Design
March 19	<u>Group Presentation (groups 1 and 2)</u>
March 21	<u>Group Presentation (groups 3 and 4)</u>
March 26	<u>Group Presentation (groups 5 and 6)</u>
March 28	<u>Group Presentation (groups 7 and 8)</u>
April 2	<u>Group Presentation (groups 9 and 10)</u>
April 4	Natural Experiments
April 9	Recap

Course Assignments and Grading

- Class participation (general): 10%
- Mid-Term: 20%
- Group presentation: 20%

- Final: 50%

Group Presentation

The group presentation will be team assignment (3 students per group, number of groups will depend on the final number of enrolled students). For this assignment, I will provide you with an article and you will have to explain it in class, focusing on the motivating the causal link of interest, explaining the dataset and the identification strategy used and discussing the limitations, the strengths and the results of the research analyzed. Important: **I will evaluate students presenting (presentation grade) AND classmates participating in the discussion (participation grade). Presentations will have a duration of 40 minutes (SHARP).**

Papers for group presentations:

Aragón, F. M., & Rud, J. P. (2013). Natural resources and local communities: evidence from a Peruvian gold mine. *American Economic Journal: Economic Policy*, 5(2), 1-25. **Group 1.**

Brollo, F., & Troiano, U. (2016). What happens when a woman wins an election? Evidence from close races in Brazil. *Journal of Development Economics*, 122, 28-45. **Group 2.**

Behaghel, L., Crépon, B., & Gurgand, M. (2014). Private and public provision of counseling to job seekers: Evidence from a large controlled experiment. *American economic journal: applied economics*, 6(4), 142-74. **Group 3.**

Angrist, J. D., & Lavy, V. (1999). Using Maimonides' rule to estimate the effect of class size on scholastic achievement. *The Quarterly journal of economics*, 114(2), 533-575. **Group 4.**

Ang, D. (2023). The birth of a nation: Media and racial hate. *American Economic Review*, 113(6), 1424-1460. **Group 5.**

Moreno-Medina, J. (2023). Sinning in the Rain: Weather Shocks, Church Attendance, and Crime. *Review of Economics and Statistics*, 105(1), 54-69. **Group 6.**

Costa, F., Marcantonio, A., & Rocha, R. (2023). Stop suffering! Economic downturns and pentecostal upsurge. *Journal of the European Economic Association*, 21(1), 215-250. **Group 7.**

Ajzenman, N., Dominguez, P., & Undurraga, R. (2023). Immigration, crime, and crime (mis) perceptions. *American Economic Journal: Applied Economics*, 15(4), 142-176. **Group 8.**

Ajzenman, N., & Durante, R. (2023). Salience and accountability: School infrastructure and last-minute electoral punishment. *The Economic Journal*, 133(649), 460-476. **Group 9.**

Braghieri, L., Levy, R. E., & Makarin, A. (2022). Social media and mental health. *American Economic Review*, 112(11), 3660-3693. **Group 10.**

EXTRA (IN CASE WE NEED MORE GROUPS)

Campante, F. R., & Do, Q. A. (2014). Isolated capital cities, accountability, and corruption: Evidence from US states. *American Economic Review*, 104(8), 2456-2481.

Campante, F. R., Depetris-Chauvin, E., & Durante, R. (2020). The virus of fear: The political impact of Ebola in the US (No. w26897). National Bureau of Economic Research.

Language of Submission

In accord with McGill University's [Charter of Students' Rights](#), students in this course have the right to submit in English or in French written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives." (Approved by Senate on 21 January 2009)

Academic Integrity

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the [Code of Student Conduct and Disciplinary Procedures](#)" (Approved by Senate on 29 January 2003) (See [McGill's guide to academic honesty](#) for more information).