

## Randomized Control Trial and Policy Evaluation

Course title - Intitulé du cours	Randomized Control Trial and Policy Evaluation
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Tapsoba Augustin
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	

### **Teaching staff contacts - Coordonnées de l'équipe pédagogique :**

Email: tapsoba.augustin@yahoo.fr Office number: TBA Office hours: Monday afternoon (specific time TBA) Preferred means of interaction: By email or with prior appointment

### **Course's Objectives - Objectifs du cours :**

This course features a broad overview of randomized experiments as a key tool in empirical research. The first part of the course discusses the rationale behind the experimental approach through the lens of prominent empirical methods. The second part covers econometric aspects as well as a variety of implementation issues that arise when running RCTs in practice. The third part is aimed at illustrating the diverse use of randomized experiments in the most recent research practice through the exposition and discussion of leading academic articles. The learning objective of the course is twofold. First, students should be able to critically assess existing empirical research that employs the experimental approach. Second, students should be able to originally think about an experimental design of a research question of their choice.

### **Prerequisites - Pré requis :**

The course is meant to be self-containing. However, basic knowledge of statistics and econometrics at the level of, say, the M1 Program Evaluation course offered at TSE will be assumed during the exposition. Two (somehow complementary) introductory econometrics textbooks that you may want to consult to either refresh or enhance your knowledge and empirical skills are: • "Introductory Econometrics. A Modern Approach", Wooldridge, Jeffrey M. Cengage Learning. • "Mostly Harmless Econometrics. An Empiricist's Companion", Angrist, Joshua D. and Jorn-Stephen Pischke. Princeton University Press.

### **Practical information about the sessions - Modalités pratiques de gestion du cours :**

Laptops and tablets are allowed provided they are used for the course. Student participation is required and will be graded.

### **Grading system - Modalités d'évaluation :**

Students will be asked to form small groups in order to work on assignments that will be graded. Groups are voluntary but each student is required to work with different classmates under different assignments. Group size is approximately 2-3 but will ultimately depend on the total number of students enrolled in the course and it will possibly vary between assignments. The requirements of the course [relative weight] are: 1. Detailed pre-analysis plan of a mock RCT [40%] A pre-analysis plan outlines the hypotheses to be tested and specifications to be used in the analysis of a randomized experiment before collecting the data generated by the random treatment assignment. In your case, you should use an existing dataset of your choice (survey or administrative data) as the baseline of your hypothetical experiment. You should write it in the form of a draft of a paper of maximum 20 pages (including bibliography, tables, etc). Final drafts are due at the end of the Fall semester - the exact due date will be communicated later during the course. Some examples of pre-analysis plans will also be made available in the course's Moodle. 2. Oral presentation of one of the papers listed in sections 3 to 5 of the reading list [40%] Each group will select one paper and students are required to critically assess the motivation, findings and contribution of the paper, with special emphasis on how the experimental design is used and the relative pros and cons of the empirical approach. Oral presentations should last about 20 minutes and should be accompanied by slides. Some examples of presentation slides will be available in the course's Moodle. 3. Homework [10%] You will be required to manipulate some STATA codes with related datasets and hand in the associated output/log files. 4. Active participation in class and during others' paper presentation [10%] All students are expected to read before each class the papers to be presented by their classmates in order to actively participate in the discussion at the end of each paper presentation. They are also required to be active during the normal sessions.

### **Bibliography/references - Bibliographie/références :**

1. Why RCT • Banerjee, Abhijit V., and Esther Duflo. "The experimental approach to development economics." *Annu. Rev. Econ.* 1.1 (2009): 151-178. • Deaton, Angus. "Instruments, randomization, and learning about development." *Journal of economic literature* 48.2 (2010): 424-55. • Duflo, Esther, Rachel Glennerster, and Michael Kremer. "Using randomization in development economics research: A toolkit." *Handbook of development economics* 4 (2007): 3895-3962. • Angrist, Joshua D., and Jörn-Steffen Pischke. "The credibility revolution in empirical economics: How better research design is taking the con out of econometrics." *Journal of economic perspectives* 24.2 (2010): 3-30. • Todd Petra E. and Kenneth I. Wolpin (2007). "Ex Ante Evaluation of Social Programs." *Annales D'Economie Et De Statistique*, no. 91/92, 2008, pp. 263-291.

2. Designing and implementing RCTs • Glennerster, Rachel, and Kudzai Takavarasha. *Running randomized evaluations: A practical guide*. Princeton University Press, 2013. • Duflo, Esther, Rachel Glennerster, and Michael Kremer. "Using randomization in development economics research: A toolkit." *Handbook of development economics* 4 (2007): 3895-3962. • Athey, Susan, and Guido W. Imbens. "The econometrics of randomized experiments." *Handbook of Economic Field Experiments*. Vol. 1. North-Holland, 2017. 73-140. • Baird, Sarah, et al. "Optimal design of experiments in the presence of interference." *Review of Economics and Statistics* 100.5 (2018): 844-860. • Muralidharan,

Karthik, and Paul Niehaus. "Experimentation at scale." *Journal of Economic Perspectives* 31.4 (2017): 103-24.

3. RCTs for policy evaluation • Chattopadhyay, Raghavendra and Esther Duflo, "Women as policy makers: Evidence from a randomized policy experiment in India," *Econometrica*, 2004, 72 (5), 1409–1443. • Bandiera, Oriana, Andrea Prat, and Tommaso Valletti, "Active and passive waste in government spending: evidence from a policy experiment," *American Economic Review*, 2009, 99 (4), 1278–1308. • Haushofer, Johannes, and Jeremy Shapiro. "The short-term impact of unconditional cash transfers to the poor: experimental evidence from Kenya." *The Quarterly Journal of Economics* 131.4 (2016): 1973-2042. • Blattman Christopher, Nathan Fiala and Sebastian Martinez (2014). "Generating Skilled Self-Employment in Developing Countries: Experimental Evidence from Uganda," *The Quarterly Journal of Economics*, vol. 129(2), pages 697-752. • Miguel Edward and Michael Kremer (2004). "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities." *Econometrica*, vol. 72(1), pages 159-217, 01.

4. RCTs and lab in the field experiments • Ashraf, Nava, Dean Karlan, and Wesley Yin. "Tying Odysseus to the mast: Evidence from a commitment savings product in the Philippines." *The Quarterly Journal of Economics* 121.2 (2006): 635-672. • Gneezy, Uri, and Alex Imas. "Lab in the field: Measuring preferences in the wild." *Handbook of economic field experiments*. Vol. 1. North-Holland, 2017. 439-464. • Jakiela, Pamela, Edward Miguel, and Vera L. Te Velde. "You've earned it: estimating the impact of human capital on social preferences." *Experimental Economics* 18.3 (2015): 385-407.

5. RCTs and structural models • Attanasio, Orazio, Cattan, Sarah, Fitzsimons, Emla, Meghir, Costas and Rubio-Codina, Marta (2018). "Estimating the Production Function for Human Capital: Results from a Randomized Control Trial in Colombia." NBER Working Paper N. 20965. • Attanasio Orazio P., Costas Meghir and Ana Santiago (2012). "Education Choices in Mexico: Using a Structural Model and a Randomized Experiment to Evaluate PROGRESA," *Review of Economic Studies*, vol. 79(1), pages 37-66. • Duflo Esther, Rema Hanna and Stephen P. Ryan (2012). "Incentives Work: Getting Teachers to Come to School." *American Economic Review*, vol. 102(4), pages 1241-78, June.

### **Session planning - Planification des séances :**

1. Why randomize? (week 1 to week 3) • Endogeneity and causality in economics: The credibility revolution in empirical economics • The causal inference approach • The structural econometrics approach

2. Designing and implementing RCTs (week 4 to week 6) • Econometrics of RCTs • Practical design and implementation issues • Sample size and the power of experiments • Additional topics (externalities, attrition, etc..)

3. RCTs applications (week 7 to week 10) • RCTs for policy evaluation • RCTs and lab-in-the-field experiments • RCTs and Structural models