

Experimental Methods

Course title – Intitulé du cours	Experimental Methods
Level / Semester – Niveau /semestre	
School – Composante	École d'Économie de Toulouse
Teacher – Enseignant responsable	Sébastien POUGET
Other teacher(s) – Autre(s) enseignant(s)	Christophe BISIÈRE
Other teacher(s) – Autre(s) enseignant(s)	Maxime DEREK
Other teacher(s) – Autre(s) enseignant(s)	Sophie MOINAS
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	30 hours
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	English

Teaching staff contacts:

- Sébastien POUGET : sebastien.pouget@tse-fr.eu, T.629
 - Christophe BISIÈRE, christophe.bisiere@tse-fr.eu, T.632
 - Maxime DEREK, maxime.derek@iast.fr, T.422
 - Sophie MOINAS, sophie.moinas@tse-fr.eu, T.630
-
- office(s) hours/day(s) of the week when students can drop by: Mondays
 - preferred means of interaction (after the classes, by email, prior appointment...):
By email and by appointment

Course Objectives: newly acquired knowledge once the course completed should be well identified

This course offers an introduction to experimental methods used in economics. The objective is to have students work on an experimental analysis of a research question that they are interested in.

This course is mainly based on the reverse pedagogy with a Do-It-Yourself spirit. After an initial discussion regarding the main principles of the experimental methodology, students are invited to produce an experimental research project, that is, to find a research idea, to design and run a pilot experiment, and to analyze and present their results. Students are free to work on a topic of interest to them, including, but not limited to, social preferences, game theory, mechanism design, competitive behavior with applications to any field of economics and finance.

At the end of this class, students will understand the interest of experimental methods for research in economics and finance. Students will know how to design an experiment. They will have experience in running an experimental pilot study. They will also present a pilot experimental analysis to the rest of the class.

To achieve this objective, the course covers the following subjects:

- Presentation of the experimental methodology: what are the objectives of an experiment? What are the pros and cons of the experimental methodology?
- Design of an experiment by students: how to formulate a research question suited for the experimental analysis? How to implement an experiment? In the lab? In the field?
- Designing for reproducibility: adopting open science practices for more robust results
- Implementation of experiments designed by students
- Analysis of experimental results

Prerequisites :

- skills and competences needed/previously acquired
- or the title(s) of the compulsory course(s) which should have been taken before

Basic statistics, Basic Microeconomics, Basic Macroeconomics, Basic Game Theory

Practical information about the sessions:

- please specify if laptops or tablets are accepted or not in the class,
- expectation on students' participation,
- how will be treated students that arrive to class late.....

Laptops are accepted in class to take notes only.

Students are expected to participate a lot and to build, by group, an entire experimental research protocol to be implemented in class.

Grading system :

- final exam or midterm exams
- Teaching Assistant grading
- weights of the weighted average main cours-TA (consistent with the voted examination "arrêté d'examen"),

- semester calendar,
- how to handle late homework...

Students in this course will be evaluated based on their experimental research project. A group grade will be attributed after an in-class group presentation of the research project. The grade will reflect the originality and the interest of the idea (5 points), the advancement and quality of the experimental project (design, implementation, results) (5 points), the quality of the analysis (5 points) and the format of the presentation (5 points).

Bibliography/references :

- list of assigned readings and other course materials: books (chapters), internet links...

Camerer, C. F., Dreber, A., Forsell, E., Ho, T. H., Huber, J., Johannesson, M., ... & Heikensten, E. (2016). Evaluating replicability of laboratory experiments in economics. *Science*, 351(6280), 1433-1436.

Camerer C. et R. Hogarth, The effects of financial incentives in experiments, *Journal of Risk and Uncertainty*, Vol. 19, 1999, 7-42.

Davis D. et C. Holt, *Experimental Economics*, Princeton University Press, Princeton, 1993.

Kagel J. et A. Roth (éditeurs), *The Handbook of Experimental Economics*, Princeton University Press, Princeton, 1995.

Kagel J. et A. Roth (éditeurs), *The Handbook of Experimental Economics*, Volume 2, Princeton University Press, Princeton, In preparation, Available in part at <http://web.stanford.edu/~alroth/alroth.html>.

Loewenstein G., Experimental economics from the vantage point of behavioural economics, *Economic Journal*, Vol. 109, 1999, 25-34.

Plott C., Will economics become an experimental science?, *Southern Economic Journal*, Vol. 57, 1991, 901-919.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological science*, 22(11), 1359-1366.

Smith V., Microeconomic systems as an experimental science, *American Economic Review*, Vol. 72, 1982, 923-955.

Session planning :

- presentation of the sessions, connection with the resources

Tentative outline

- Experimental methodology and design of experiments (3 hours, Sébastien Pouget)
- Experimental design: link with theory 1/2 (3 hours, Sophie Moinas)
- Planning experiments: Experimental facilities at TSE (1.5 hours, Maxime Derex) and Ethical issues (1.5 hours, Maxime Derex)
- Experimental design: link with theory 2/2 (3 hours, Sophie Moinas)
- Experimental design: Open sciences practices (1.5 hours, Maxime Derex) and Online experiments (1.5 hours, Maxime Derex)
- Programming for experiments (9 hours, Christophe Bisière)
- Running experiments (3 hours, Christophe Bisière and Sébastien Pouget)
- Students' presentations (3 hours, all professors)

Distance learning:

Distance learning can be provided when necessary by implementing, for example:

- Interactive virtual classrooms
- Recorded lectures (videos)
- MCQ tests and other online exercises / assignments
- Remote (online) tutorials (classes)
- Chatrooms

If the situation permits, the course will be held in a classroom in order to facilitate the participation of students. However, if required by the situation, the course can migrate online and be held via a videoconferencing system. Students' presentations will be organized in class, if possible, or online.