

- Faculté des sciences économiques
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Empirical Methods for Economists (5ER1022)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Bachelor en mathématiques	Cours: 4 ph	Voir ci-dessous	6
Bachelor en sciences économiques, orientation comptabilité/finance	Cours: 4 ph	Voir ci-dessous	6
Bachelor en sciences économiques, orientation économie politique	Cours: 4 ph	Voir ci-dessous	6
Bachelor en sciences économiques, orientation management	Cours: 4 ph	Voir ci-dessous	6
Bachelor en sciences économiques, orientation ressources humaines	Cours: 4 ph	Voir ci-dessous	6
Bachelor en sciences économiques, orientation systèmes d'information	Cours: 4 ph	Voir ci-dessous	6
Pilier principal B A - économie	Cours: 4 ph	Voir ci-dessous	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

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Objectifs:

This course covers the basics of applied empirical research in social sciences in general and economics in particular, using the tools of econometrics. Students will learn how to use data to inform a particular decision, including skills to assemble a dataset and the application of some of the most widely used econometric tools. We will focus on applications that can be useful in a professional environment (such as consultancies and public administrations).

First, we will study the conditions under which the linear regression model can be used to quantify the causal effect of an intervention of interest. This will form the basis for the application of econometrics to inform concrete decisions. Second, we will learn to apply a set of tools and interpret the results. These tools include OLS regression (continuous and categorical regressors, interaction terms, polynomial specifications), models for binary (yes/no) outcomes, and how panel datasets can be exploited to control for unobserved heterogeneity. In the last part of the course, we will introduce more advanced research designs such as difference-in-differences and instrumental variables. A key objective of the course is to make these tools practical, and all the methods seen in the classroom will be implemented during computer lab sessions. By the end of the class, students will have acquired skills to manipulate data in Excel (matching datasets, pivot tables) and use Stata to run a set of regression models.

Important note: The language for the course is English. Doing so, the main objective is that students build up the relevant vocabulary to read and interpret the scientific literature (which is almost exclusively in English). In-class interactions are often in French, and assignments and the exam can be carried out in French.

Contenu:

Each week we will hold one session in the classroom and one session in the computer lab. Sessions in the classroom will be useful to introduce concepts and review a number of important econometric tools for data analysis. Students will also get to read high-quality published articles on different domains to understand how empirical results are presented and interpreted.

In the computer lab sessions, we will first learn how to use software packages in order to study a particular research question with a dataset. We will make use of Excel, which will be useful for the student's professional careers, as well as Stata, which is a popular and user-friendly software to run the most widely used econometric techniques.

Sessions in the classroom and in the lab are designed to be highly complementary, with the propose of giving students the required knowledge and tools to carry out and interpret applied research during their future professional activities.

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Forme de l'évaluation:

The students' achievements will be graded according to the following scheme: (i) a 1-page research sketch laying out an empirical strategy to study a topic of interest, followed by a short presentation during class (20% of the final grade); (ii) a 2-page report on an empirical research project or replicating the results of a research article, followed by a presentation to other students (20% of the final grade); (iii) a final written exam (duration: 2h) during the exam session (60%). For the re-take exam, the results obtained from the exercise series are not taken into account (written exam, duration: 2h, 100% of the final grade).

Neither documents nor connected devices are permitted during the exams. Non programmable calculators are authorized. In case of violation of these rules, the students are in situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Documentation:

The course uses a variety of relevant sources that can be useful to the students' learning process, and all of them will be made available on Moodle.

First, we will use selected chapters of the book by Angrist and Pischke (2014) for their non-technical coverage of empirical research in social sciences: Joshua D. Angrist & Jörn-Steffen Pischke (2014) *Mastering Metrics: The Path from Cause to Effect*, Princeton University Press

For some parts of the class, we will follow part of the econometric textbook by Wooldridge (2016): Jeffrey Wooldridge (5th ed., 2016) *Introductory Econometrics: A Modern Approach*, Cengage Learning

Finally, the book by Cameron and Trivedi (2010) is a useful resource for the application of econometric techniques with Stata: A. Colin Cameron and Pravin K. Trivedi (2010) *Microeconometrics Using Stata: Revised Edition*, Stata Press

All three books will be available as pdf on Moodle.

Pré-requis:

There is no prerequisite for this class, although a basic understanding of econometrics, statistics and calculus is certainly a plus. Students who do not feel comfortable with these are encouraged to set up a meeting with the professor to discuss possible adjustments.

Forme de l'enseignement:

Weekly 2-hour in-class lecture and 2-hour computer lab session. The course will combine standard lectures and sessions where students work on their own under supervision of the instructor (e.g. during lab sessions).