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- Faculté des sciences économiques
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Applied Econometrics (5ER2020)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en économie appliquée	**Cours: 4 ph**	**Voir ci-dessous**	6
Master en sciences économiques, orientation politique économique	**Cours: 4 ph**	**Voir ci-dessous**	6
Master en statistique	**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 introduces a scientific, data-driven approach to the analysis of public policy and other economic issues. Hence a first objective will be to define notions such as treatment effects, control groups, and counterfactual, and delineate conditions under which observational data can provide evidence about a cause-to-effect relationship. Starting from the gold standard of random assignment in an experimental setting, we will emphasize how econometric tools can have a very important role to play to inform decisions.

As a second objective, students will acquire the basic skills to carry out empirical research themselves. We will work in the computer lab once a week to learn how to assemble a workable dataset, analyze it with econometric econometric tools, and interpret the results. We will also discuss how scientific articles are written and get you started with your master thesis work.

By the end of the class, students will be able to identify research designs that can lead to convincing and policy-relevant analysis, they will have basic software skills required to carry out empirical research themselves, and they will be trained to think critically about empirical work carried out by others.

Contenu:

The course will combine classroom teaching sessions and supervised computer lab exercises. In the classroom, we will review a number of econometric modeling tools, and how these can be used to estimate treatment effects and inform causal relationships. The tools will include basic linear model and its extensions to capture heterogeneous treatment effects, non-linear models for categorical variables, basic panel data (fixed-effects) models, difference-in-difference models, regression discontinuity designs, and instrumental variable techniques.

In the computer lab sessions, we will pay particular attention to the reporting and interpretation of results for research articles and reports. We will work with both simulated and real-world datasets, and students will apply software and econometric techniques themselves, mainly using Excel and Stata. These sessions are designed to provide tools that will be useful for future professional endeavors of students. Teaching will be interactive and emphasize a hands-on approach to perform empirical research in social sciences and policy evaluation.

Forme de l'évaluation:

Mixed assessment based on two class assignments (20% each), regular classroom quizzes (10%), and a final 2-hour written exam during the exam session (50%).

Retake: 2-hour written exam during the exam session (100% of the final grade).

Neither documents, nor connected objects are allowed during the exams. 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:

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The course will loosely follow sections from three different textbooks, which can be downloaded from Moodle. The first two books cover the main conceptual topics covered in the course: (i) Joshua D. Angrist & Jörn-Steffen Pischke (2014) Mastering Metrics: The Path from Cause to Effect, Princeton University Press; (ii) Jeffrey Wooldridge (5th ed., 2016) Introductory Econometrics: A Modern Approach, Cengage Learning.

We will also refer to an excellent resource on how to use Stata to carry out empirical research: A. Colin Cameron and Pravin K. Trivedi (2010) Microeconometrics Using Stata: Revised Edition, Stata Press

Finally, we will use a number of well-published articles that will be discussed during class.

Pré-requis:

Having completed at least one econometrics course at the bachelor level is required. Students with background in other disciplines (incl. other social sciences) are encouraged to make an appointment with the instructor to discuss possible adjustments.

Forme de l'enseignement:

Weekly 2-hour in-class lecture and 2-hour computer lab session. The course will make use of "active learning" methods, i.e. interactive teaching drawing on prior preparation, supervised individual and group work, as well as active class participation by students. Lab sessions will give students the opportunity to apply econometric techniques under supervision by the professor.