

## Advanced Microeconometrics

**ECTS** : 3

### **Description du contenu de l'enseignement :**

We will cover the following topics in class:

#### **Basics and cross-cutting topics:**

- Maximum Likelihood estimation
- GMM estimation
- Bootstrapping, cross-validation, Jack-knife estimation

#### **Advanced IV:**

- Recap IV
- Testing IV assumptions
- Characterizing the complier population
- Nonlinear estimation

#### **Advanced DID**

- Recap DID
- Two-way Fixed estimation
- Problems with the TWFE estimator
- “New” DID approaches
- Event studies
- Synthetic Control

#### **Advanced Panel data methods**

- Recap FE and RE
- Correlated Random Effects
- Dynamic Panel data models
- Nonlinear Panel data

#### **Compétence à acquérir :**

In this course, we will cover advanced topics in microeconometrics. Building on the standard toolkit used in empirical research, we will discuss how the basic approaches can be extended to more challenging applications (e.g., limited dependent variables, violations of key assumptions etc.). The class will consist of lectures, in which we cover relevant econometric theory, and computer tutorials, in which we will apply these methods to real-world data.

After completing this course, students will...

...have an intuitive understanding of the econometric theory behind the most important methods used in empirical research, and in particular the key assumptions required for these methods.

...be able to discuss how plausible the key assumptions behind these methods are and how we can assess whether they hold in practice.

...be able to read and critically discuss empirical research using advanced econometric techniques.

...be able to apply these methods in their own research, e.g., for their master thesis.

#### **Mode de contrôle des connaissances :**

30% of the final grade will be assigned based on a presentation of an empirical research paper in class.

70% of the final grade will be assigned based on a written exam.

**Université Paris Dauphine - PSL - Place du Maréchal de Lattre de Tassigny - 75775 PARIS Cedex 16 - 21/11/2024**