

## Graduate econometrics II

### Lecturers

Paula Eugenia GOBBI (Coordinator) and Alejandra Ramos

### Course mnemonic

ECON-S429

### ECTS credits

5 credits

### Language(s) of instruction

English

### Course period

Second term

### Campus

Solbosch

## Course content

Applied micro-econometrics: a) Instrumental variables, Wald estimate, LATE, Two-Stage-Least Squares, Weak instruments; b) Difference-in-Differences, Difference-in-Difference-in-Differences, Serial correlation problem; c) Regression Discontinuity Design; d) clustering; e) Methods in panel data; f) Non-linear models and duration models. 2. Working with geographical data (raster files). 3. Structural Estimation: a) Introduction to Fortran programming; b) Minimum Distance Estimation and Generalized Method of Moments. Optimal Weighting Matrix; c) Estimation of Standard Errors with bootstrap.

## Objectives (and/or specific learning outcomes)

The course should serve graduate students to reinforce their empirical skills, which will then be used in an empirical project and their thesis.

## Pre-requisites and co-requisites

### Required knowledge and skills

This class will discuss advanced empirical methods and the practical problems that researchers face when doing empirical research. The focus will be put on analyzing identification strategies that have been used in the empirical literature. We will cover empirical methodologies that are mostly used in micro-econometric analysis and structural papers.

## Teaching method and learning activities

The course consists of 24 hours of lectures, 2 hours each, and 24 hours of exercises. The exercises will be in Stata, and in R and Fortran for the last part of the course. An introductory class on how to program in Fortran will be given by the professor. The exercises will focus on reproducing empirical and structural seminal papers.

## Contribution to the teaching profile

This course contributes to the following program learning objectives:

LO 1.2 - Assess the quality of an economic research produced by others

LO 1.3 - Identify and analyse an issue using the relevant analytical tools and methods

LO 2.1 - Adopt a scientific approach to data collection, research and analysis and communicate results with clear, structured and sophisticated arguments

LO 2.2 - Display critical thinking and develop autonomous learning strategies and techniques

LO 3.2 - Thorough and critical ability to use empirical and statistical tools in economics

LO 4.1 - Work and communicate effectively as part of a team in an international and multicultural environment

## Other information

### Place(s) of teaching

Solbosch

## Programmes

### Programmes proposing this course at the Solvay Brussels School of Economics and Management

MA-ECO | **Master in Economics : Econometrics** | finalité Research in Economics/unit 1 and finalité Research in Economics and statistics/unit 1

### Programmes proposing this course at the faculty of Sciences

MA-STAT | **Master in Statistics : General** | finalité Research General/unit 1