



**Dipartimento di Scienze Economiche ed Aziendali**  
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**Dottorato in Scienze Economiche e Aziendali**  
*Doctoral Program in Economics and Business*  
Coordinatrice: Prof.ssa Francesca Cabiddu

## **Econometrics for Business and Management**

Academic Year 2025-26 – cycle XLI

Course leader: Emanuela Marrocu

### **Aims of the course**

The course aims to develop students' ability to understand, critically assess and carry out econometric analysis at an intermediate level.

### **Learning outcomes and competences**

The course aims to endow students with knowledge and skills required to carry out empirical analysis of economic phenomena.

In particular, the course aims to equip students with a) the awareness of the empirical approach to the study of real-world economic issues; b) the ability to analyse empirical economic studies; c) a sound understanding of the uncertainty characterizing economic phenomena and a good knowledge of the statistical methods used to deal with it.

At the end of the course students will have acquired knowledge of the core econometric methods. They will have also acquired practice with software packages and the ability to develop empirical strategies to be applied in their own research work.

### **Pre-requisites**

The course assumes that students have already acquired the knowledge and skills taught in graduate-level courses of Statistics, Mathematics and Economics. Students are expected to be familiar with the concepts related to:

- mathematical foundations (functions; differential calculus; matrices)
- probability theory
- how to draw inference on the population from sample evidence
- linear regression model and Ordinary Least Squares (OLS) estimation method.

Moreover, it is also assumed that students are already familiar with basic data management procedures and the use of spreadsheet applications (e.g. Excel).

### **Course contents and syllabus**

- Recap of simple linear regression models and OLS estimation method
- Omitted variable bias and the multiple regression model
- Testing linear restrictions
- Multicollinearity
- How to specify a multiple regression model
- Functional form and non-linear model specifications
- Internal and external validity of empirical models.

### **Organization of the course**

The course consists of 12 hours of lectures scheduled as follows:

Monday January 19:	09.00-12.00	Aula 8
Thursday January 22:	09.00-12.00	Aula 8
Monday January 26:	09.00-12.00	Aula 8
Wednesday January 28:	09.00-12.00	Aula 8

The relevant materials can be found in the *Teams class* "PhD Programme in Economics and Business" following this path: Documenti/General/Class Materials/Econometric for Business and Management".

First year PhD students are made members by using their UniCa email account. Students can access the *Teams* application by using the same account.

### **Assessment methods**

The assessment is based on a paper assignment (50%) and a written exam (50%).

### **Reading list**

- Stock J.H. and M. Watson, Introduction to Econometrics, fourth edition, Pearson, 2019.
- Wooldridge J.M., Introductory Econometrics: A Modern Approach, 5th edition, Thompson South-Western, 2013.