# Econometrics

**MASTER'S DEGREE IN ECONOMICS AND FINANCE**

*UNIVERSIDAD INTERNACIONAL MENÉNDEZ PELAYO*

# GENERAL DATA

## Name

Econometrics

## Code

102666

## Academic year

2024-25

## Degree

[MASTER'S DEGREE IN ECONOMICS AND FINANCE](#)

## ECTS Credits

6

## Type

MANDATORY

## Duration

Cuatrimestral

## Language

English

# CONTENTS

## Contents

This course introduces the main models and methods for estimation and inference used in econometrics both for time series and for panel and cross-sectional data.

More information: [cemfi.es](cemfi.es)

# COMPETENCES

## General competences

G1 - Demonstrate solid knowledge of economic theory, and the relevant economic, econometric and computational techniques.

G2 - Know how to apply the knowledge acquired and be able to use problem-solving abilities in new or relatively unknown settings within wider or multidisciplinary contexts related to economics and finance.

G3 - Integrate knowledge and tackle the complexity involved with making judgements based on incomplete or limited information, and which includes reflections on the social and ethical responsibilities tied to the application of one's knowledge and judgement.

G4 - Critically analyse, assess and summarise new and complex ideas related to empirical theories and methodologies in the field of economics.

G5 - Design and carry out an advanced academic research project, formulating reasonable hypotheses in the field of economics.

G6 - Give clear and unambiguous oral presentations of scientific and technical work on economics to specialised and non-specialised audiences.

G7 - Produce suitable written compositions, as well as work projects or scientific articles.

G8 - Organise and plan one's own work, fostering initiative and an entrepreneurial spirit.

G9 - Become part of work groups dedicated to economic research projects.

G10 - Demonstrate sufficient independence, and study and summary skills so that after the master's programme, students are able to undertake a PhD in the field of economics.

## Specific competences

EO7 - Be aware of advanced theories and models on modern macroeconomics.

ET2 - Have an in-depth knowledge of how fundamental microeconomic actors, consumers and producers behave, and the main results of the concept of general competitive equilibrium. Possess basic knowledge in game theory with complete information.

ET3 - Be aware of the main modern information economy models, based on analysis of choices in situations of uncertainty and game theory with incomplete information.

ET4 - Have basic knowledge of macroeconomics through structure analysis and what the main reference models imply.

ET5 - Possess the necessary statistical knowledge to be able to follow econometrics courses and topics with statistical content from other courses on the programme, with regard to the basic concepts of probability theory, inference and asymptotic theory, with particular reference to regression models.

ET6 - Know the main estimation and inference models and methods used in econometrics, both for time series, and cross-cutting and panel data.

# LEARNING PLAN

## Training activities

| Type of activity | Hours | % In person |
|---|---|---|
| Theory classes | 30 | 100 |
| Practical classes | 17,5 | 100 |
| Study of the theory content of the course | 50 | 0 |
| Solve practical exercises | 33,3 | 0 |
| Prepare class presentations | 19,1 | 40 |

## Teaching methods

Theory classes
Exercises
Essay writing
Class discussion on work submitted by students

## Learning outcomes

-Rigorous and full knowledge of the main mathematical methods used in economics.
-Have an in-depth knowledge of how fundamental microeconomic actors, consumers and producers behave, and the main results of the concept of general competitive equilibrium. Possess basic knowledge in game theory with complete information.
-Be aware of the main modern information economy models, based on analysis of choices in situations of uncertainty and game theory with incomplete information.
-Have basic knowledge of macroeconomics through structure analysis and what the main reference models imply.
-Possess the necessary statistical knowledge to be able to follow econometrics courses and topics with statistical content from other courses on the programme, with regard to the basic concepts of probability theory, inference and asymptotic theory, with particular reference to regression models.
-Know the main estimation and inference models and methods used in econometrics, both for time series, and cross-cutting and panel data.

# EVALUATION

## Evaluation system

| Type | Minimum score | Maximum score |
|---|---|---|
| Exercises | 0.05 | 0.3 |
| Presentations | 0.05 | 0.15 |
| Exams | 0.7 | 0.95 |

## Official examination dates

Academic schedule

# FACULTY

## Coordinator/s

**Arellano González, Manuel**

*Doctor*

*Profesor de Economía*

*CEMFI, Madrid*

## Lecturers

Porfessor responsible for the subject

UIMP

# SCHEDULE

## Schedule

Monday (9:30 &#8211; 11:00), and Wednesday (9:30 &#8211; 11:00 y 11:30 &#8211; 13:00)

# BIBLIOGRAPHY AND LINKS

## Bibliography

Basic bibliography

Bruce Hansen, Econometrics https://www.ssc.wisc.edu/~bhansen/econometrics/
J. Angrist and J.-S. Pischke, Mostly Harmless Econometrics, Princeton University Press, 2009.
C. Cameron and P. Trivedi, Microeconometrics, Cambridge University Press, 2005
C. Gourieroux and A. Monfort, Statistics and Econometric Models, Cambridge U.P., 1995.
J. D. Hamilton, Time Series Analysis, Princeton University Press, 1994.
F. Hayashi, Econometrics, Princeton University Press, 2000.
J. Stock and M. Watson, Introduction to Econometrics, Pearson Education, 2nd edition, 2007.
J. Wooldridge, Econometric Analysis of Cross Section and Panel Data, MIT Press, 2010.