Statistical Methods in Econometrics

MASTER'S DEGREE IN ECONOMICS AND FINANCE

UNIVERSIDAD INTERNACIONAL MENÉNDEZ PELAYO

GENERAL DATA

Name

Statistical Methods in Econometrics

Code

102663

Academic year

2023-24

Degree

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

ECTS Credits

6

Type

MANDATORY

Duration

Cuatrimestral

Language

English

CONTENTS

Contents

This course provides students with the required knowledge in statistics for econometric courses and for the topics with statistical content in other courses of the Program. This course reviews the basic concepts of probability theory, inference and asymptotic theory, with special reference to regression models.

[More information](#)

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		100
Practical classes		100
Study of the theory content of the course		0
Solve practical exercises		0
Prepare class presentations		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

Mira Mcwilliams, Pedro

Doctor en Economía, University of Minnesota
Profesor de Economía
Centro de Estudios Monetarios y Financieros (CEMFI)

Lecturers

Porfessor responsible for the subject

SCHEDULE

Schedule

Tuesday (14:30 - 18:00), and Friday (14:30-16:00)

BIBLIOGRAPHY AND LINKS

Bibliography

B. W. Lindgren, "Statistical Theory", McMillan, 4th edition, 1998.

A. Goldberger, "A Course in Econometrics", Harvard University Press, 1991.

T. Amemiya: "Introduction to Statistics and Econometrics", Harvard University Press, 1994.

P. Aronow and B. Miller: "Foundations of Agnostic Statistics"; Cambridge University Press, 2019

B. Hansen, "Econometrics", University of Wisconsin, 2000-2020.