COURSE DATA

DATA SUBJECT

Code: 44953
Name: Microeconometrics
Cycle: Master's Degree
ECTS Credits: 5
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
2242 - Master's Degree in Economics	Facultat d'Economia	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2242 - Master's Degree in Economics	Materia instrumental	ELECTIVES

COORDINATION

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SUMMARY

Microeconometrics is a subject in the second semester of the Master in Economics. The aim of this subject is to provide economists sufficient knowledge of the most updated topics in microeconometrics so that they can choose the most appropriate estimators as well as exploit both the databases and economic models.
The programme is designed to respond to the needs of researchers and practitioners when working with real data, where an important dimension in the unit of analysis is the individual. This requires the use of micro data and the use of advanced techniques in (micro) econometrics.
The practical content of this course has two objectives: on the one hand, the knowledge and management of the statistic-econometric package STATA; on the other hand, and in each of the issues, being able to solve practical cases that require the use of the various estimators explained in the theoretical part of the program.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

There are no specified enrollment restrictions with other subjects of the curriculum.

Econometrics in the first semester of the Master in Economics.

COMPETENCES / LEARNING OUTCOMES

2242 - Master's Degree in Economics

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

DESCRIPTION OF CONTENTS

1. Panel data models.

1.1. Fixed effects and random effects.
1.2. Static models.
1.2.1. The random effects estimator: Generalized Least Squares (GLS).
1.2.2. The fixed effects estimator: Within-Groups (WG) and individual dummies regression.
1.2.3. Random effects versus fixed effects: Hausman test.
1.2.4. Some instrumental variables (IV) extensiones for the random and the fixed effects estimators.
1.3. Dynamic models.
1.3.1. Problems in estimation of dynamic models with panel data.
1.3.2. The Arellano and Bond estimator: An application of the Generalized Method of Moments estimator (GMM).
1.3.3. The Sargan test of overidentifying restrictions.
1.3.4. The test of correlation of idiosincratic errors.
1.3.5. The Arellano and Bover, and the Blundell and Bond estimator: the System Generalized Method of Moments estimator (Sistem-GMM).

2. Discrete choice models.

2.1. Introduction.
2.2. Binomial response models: the linear probability model for binary response; and, the Probit and Logit models. Maximum likelihood estimation.
2.3. Reporting the results for Probit and Logit.
2.4. Multinomial discrete choice models: non-ordered (multinomial logit), probabilistic choice models (conditional multinomial logit) and non-ordered models.

3. Censored dependent variable models.

3.1. Introduction
3.2. The Tobit model
3.3. Estimation and inference of the Tobil model. 3.4. Reporting the results.
3.5. Heckmans method (sample selection models).

4. Count data models.

4.1. Definition, examples and distribution functions.
4.2. Poisson model.
4.2.1. Distribution function, properties and assumptions.
4.2.2. Maximum likelihood estimator and consistency.
4.2.3. Interpretation of coefficients: Marginal effects.
4.2.4. Main limitation of the Poisson model, consequences and solutions. 4.3. Negative Binomial model.
4.4. Zero inflated count data models.

5. Some advanced topics in causal inference

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	40,00
Classroom practices	10,00
Total hours	**50,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	5,00
Individual or group project	10,00
Independent study and work	35,00

Preparation of lessons	25,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**75,00**

TEACHING METHODOLOGY

EVALUATION

The composition of the final score for this topic will be 80% from the exam score and 20% from the work developed by the student through the course.

REFERENCES

- Cameron, A. C., and Trivedi, P. K. (2005): Microeconometrics: Methods and applications. Cambridge University Press. Greene, W. H. (2003): Econometric analysis. 7th edition. Prentice-Hall. Wooldridge, J. M. (2006): Introductory econometrics: a modern approach. South-Western. Wooldridge, J. M. (2008): Econometric analysis of cross section and panel data, 2nd edition. The MIT press.

- Topic 1 Arellano, M. (2003): Panel data econometrics. Oxford University Press. Hsiao, C. (1986): Analysis of Panel Data. Econometric Society Monographs, Cambridge. Lee, M. J. (2002): Panel data econometrics: Methods of moments and limited dependent variables. Elsevier Science. Topics 2 & 3 Lee, M. J. (2002): Panel data econometrics: Methods of moments and limited dependent variables. Elsevier Science. Maddala, G.S. (1983): Limited Dependent and Qualitative Variables in Econometrics, Cambridge. Topic 4 Winkelmann, R. (1997): Econometric analysis of count data. Springer. Topic 5 Angrist; J. D. and J.S. Pischke (2008) , Mostly Harmless Econometrics: An Empiricists Companion, Princeton University Press. Cunningham, S. (2021). Causal inference: The mixtape. Yale university press.