COURSE DATA

DATA SUBJECT

Code: 36801
Name: Econometrics I
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1933 - Double Degree in Law and Economics_2022	Facultat d'Economia	4	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1933 - Double Degree in Law and Economics_2022	Asignaturas de cuarto curso	COMPULSORY

COORDINATION

BRETO MARTINEZ CARLES

SUMMARY

The goal of the course is for the students to know and be able to implement and interpret the results obtained from the linear regression model--the cornerstone of current data analysis, including economic data. The motivation for this goal is twofold. On the one hand, it is intended to lay the foundation for making predictions and evaluating the effectiveness of economic policies. On the other hand, it is also intended--through all the study of the linear regression model--to strengthen and deepen the understanding of the fundamental ideas of statistics and data-driven decision making.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

No other requirements have been specified.

COMPETENCES / LEARNING OUTCOMES

DESCRIPTION OF CONTENTS

1. Econometrics

- Decisions in uncertain contexts based on data.
- The role of models in economic theory and econometrics.

2. The simple linear regression model

- Ordinary Least Squares (OLS) estimation.
- Descriptive properties of OLS estimators.
- Interpretation of coefficients.
- Prediction.
- Goodness of fit and model selection.

3. The general linear regression model

- OLS estimation: properties and interpretation of coefficients.
- Goodness of fit and model selection.

4. Regression analysis and statistical inference

- Basic conditions for inference.
- Hypothesis testing.
- Testing one parameter.
- Testing a subset of parameters.

5. Regression analysis with qualitative information.

- Dummy explanatory variable and interpretation of coefficients.
- Explanatory variable with multiple categories.
- Interaction of variables.

6. Diagnosis and validation of the general linear model

- Multicollinearity.
- Model specification, normality and heteroscedasticity.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	90,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The teaching methodology will be active. Learning will be structured around theoretical-practical classes during which the exposition of the concepts of the subject will alternate with the resolution of problems, both generally stated and related to specific real situations and data sets. Group activities in the classroom will also be included. To make the activities more dynamic, the class will work on materials individually and prior to the session, outside the classroom.

In order to take full advantage of the course, it will be essential for each student to have their own laptop where programs and libraries can be installed on the fly.

EVALUATION

The grade of the course will be the weighted sum of the grade of a final exam (70%) and the grade of activities throughout the semester (30%), provided that the final exam is passed (if the final exam is not passed, the grade of the course will be the grade of the final exam on a 0-10 scale).

The activities throughout the semester may include handing in homework problems, taking partial tests or participating in activities in and out of the classroom. These activities only have academic meaning at the time they are proposed, so they are not recoverable (although the grade may be kept until the second call if the exam is not passed in the first one).

In any case, the evaluation will follow the regulations of the Universitat de València that apply, namely its "reglamento de evaluación y calificación" and "protocolo de actuación ante prácticas fraudulentas."

REFERENCES

- Angrist, J. D., & Pischke, J.-S. (2015). Mastering 'metrics: the path from cause to effect. Princeton University Press.
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). An Introduction to Statistical Learning: with Applications in R (Second edition). Springer US. https://doi.org/10.1007/978-1-0716-1418-1
- Wooldridge, J. M. (2016). Introductory econometrics: a modern approach (Sixth edition). Cengage Learning.
- Heiss, F. (2020). Using R for Introductory Econometrics (2nd edition). http://www.URfIE.net
- Greene, W. H. (2020). Econometric analysis (Eighth edition, global edition). Pearson.
- Stock, J. H., & Watson, M. W. (2020). Introduction to econometrics (3rd edition). Pearson.