UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Econometrics

Academic Year 2026/2027

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

ECONOMICS

3. Cycle

1st

4. Course Unit

Econometrics (03316)

5. Scientific Area

6. Curricular Year

2nd

7. Type of Curricular Unit / Semester

1st Semester

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8. Class type and workload (work time)

Theoretical classes:	
Practical classes:	
Theoretical-Practical Classes	30,00
Tutorial Guidance:	20,00

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor FERNANDO MANUEL MONTEIRO MARTINS

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

The general objective of this curricular unit is to provide the elementary principles of econometrics.

15. Specific Objectives

The content of this curricular unit starts from the basic concepts of regression analysis and evolves towards gradually framing a vast set of techniques and tools of econometric analysis, in particular, hypothesis testing, forecasting, permanence of structure, dummy variables, heteroscedasticity and autocorrelation.

16. Skills to be acquired

Apply multiple regression methods
Identify weaknesses in econometric models
Interpret statistical results
Test economic hypotheses
Use R econometric software
Assess the validity of models
Apply statistical methods to panel data

17. Teaching Methodology

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In order to achieve the objectives set out above, teaching is carried out in theoretical-practical classes and tutorial classes. In theoretical-practical classes, the different aspects of the subject are presented and completed with the respective practical component. In tutorial classes, the main aspects of the program are discussed and students are guided in carrying out practical work.

18. Course Unit Program

Chapter I - Multiple Linear Regression Model (MLRM)
1.1. Introduction: Motivation
1.2. Hypotheses of the Multiple Linear Regression Model.
1.3. Ordinary Least Squares (OLS).
1.4. Properties of the least squares estimators.
1.5. Nonlinear but linearizable functions: Functional forms.
1.6. Sum of squares and its decomposition. Coefficient of determination.
1.7. Model discrimination criteria
Chapter II - Inference in the Regression model: Tests and Forecasting
2.1. Global validity test.
2.2. Hypothesis tests on the coefficients (t-ratios).
2.3. Improvement test.
2.4. Linear restrictions on the coefficients - Tests
2.5. Confidence intervals for regression parameters.
2.6. Forecasting and prediction intervals.
Chapter III - Structural stability and dummy variables
3.1. Introduction.
3.2. Tests of structural stability
3.3. Dummy explanatory variables. Definition, use and examples.
3.4. Building models with dummy variables.
Chapter IV - Violation of MRLM assumptions: Detection and correction
4.1. Introduction
4.2. Heteroscedasticity and normality
4.3. Autocorrelation

19. Assessment Methods

The General Regulations for the Assessment of Knowledge currently in force will apply. Under continuous assessment, oral contributions distributed throughout the teaching period and a final written test will be mandatory

20. Didactic Resources

The presentation of the material will be done using PowerPoint
Use R for econometric analysis and, occasionally, Excel and SPSS
Access to reference databases in the economic area: INE, Banco de Portugal, Eurostat, European Central Bank and IMF.

21. Sustainability Objectives

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Ensure access to inclusive, quality and equitable education, promoting learning opportunities for all students regardless of their starting point in terms of concepts.
Provide students with tools that promote their employability, particularly in the areas of economics and management. Mastery of econometric techniques is a huge asset.
Provide students with tools that allow them to formulate problems with a high level of innovation.

22. Keywords

Econometrics
Linear Regression Model
OLS
Applied Economics

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23. Main Bibliography

Author(s): HEISS, Florian
Title: Using R for Introductory Econometrics
Edition: 2.ª Year: 2020
Local:
Publisher: CreateSpace Independent Publishing Platform
ISBN Code:

Author(s): WOOLDRIDGE, Jeffrey
Title: Introductory Econometrics: A Modern Approach
Edition: 8ª Year: 2025
Local:
Publisher: Cengage
ISBN Code:

Author(s): STOCK, James e WATSON, Mark W.
Title: Introduction to Econometrics
Edition: 4.ª Year: 2018
Local:
Publisher: Pearson
ISBN Code:

24. Complementary Bibliography

Author(s): GREENE, W. H.
Title: Econometric Analysis
Edition: 8ª Year: 2018
Local:
Publisher: Pearson
ISBN Code:

Author(s): A. Colin Cameron and Pravin K. Trivedi
Title: Microeconometrics Using Stata
Edition: 2ª Year: 2022
Local:
Publisher: Stata Press
ISBN Code:

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Autor / Author	Prof. Doutor FERNANDO MANUEL MONTEIRO MARTINS
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Colaborador(es) / Colaborator(s	-
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