UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Econometrics

Academic Year 2025/2026

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

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt

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

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt

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 (MLRS)
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 constraints on coefficients - Tests
2.5. Confidence intervals for regression parameters.
2.6. Forecasting and prediction intervals.
Chapter III - Permanence of structure and dummy variables
3.1. Introduction.
3.2. Tests on permanence of structure
3.3. Auxiliary explanatory variables. Definition, use and examples.
3.4. Building models with auxiliary variables.
Chapter IV - Violation of MRLM assumptions: Detection and correction
4.1. Introduction
4.2. Heteroscedasticity and normality
4.3. Autocorrelation

19. Assessment Methods

General assessment regulation with relevance to tests, attendance and work in class. The interest demonstrated as well as all the work dedicated by the student to this curricular unit will be taken into consideration in the assessment.

20. Didactic Resources

The presentation of the material will be done using PowerPoint
Use of R software 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

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt

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

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt

23. Main Bibliography

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

Author(s):	WOOLDRIDGE, Jeffrey		
Title:	Introductory Econometrics: A Modern Approach		
Edition:	8ª	Year:	2025
Local:			
Publisher:	South-Western College Publishing		

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

24. Complementary Bibliography

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

Author(s):	CAMERON, A. C., TRIVEDI, P. K.		
Title:	Microeconometrics Using Stata		
Edition:	2ª	Year:	2022
Local:			
Publisher:	Stata Pres		

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt

UNIVERSIDADE LUSÍADA
LISBOA

Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'ECONOMETRIA': Academic Year 2025/2026
Autor / Author	Prof. Doutor FERNANDO MANUEL MONTEIRO MARTINS
Classificação / Classification	-
Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
Data Hora / Date Time	
Formato de dados / Data Format	Texto / Text, PDF
Estatuto de utilização / Usage	Acesso público / Public Access
Relação / Relation	Version 1,0

(c) Universidade Lusíada, 2025

FUNDAÇÃO MINERVA CULTURA - ENSINO E INVESTIGAÇÃO CIENTÍFICA

Rua da Junqueira, 188 a 198 - 1349-001 LISBOA - Telefone 213 611 500 - Fax 213 638 307 - e-mail: info@lis.ulusiada.pt - https://www.lis.ulusiada.pt