UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Econometrics

Academic Year 2023/2024

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

2nd 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 HELDER MANUEL GOMES DOS REIS

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

The syllabus of this curricular unit has the general objective of providing the basic principles of econometrics.

15. Specific Objectives

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

16. Skills to be acquired

Familiarize students with the main introductory concepts of econometrics. Thus, after attending this curricular unit, students should be able to formalize a problem of an economic nature, collect information in national and international databases and, based on the linear regression model and specific software, build models, test their validity and make predictions.

17. Teaching Methodology

In order to fulfill the stated objectives, teaching is done in theoretical-practical classes and tutorial classes. In the theoretical-practical classes, the presentation of the different points of the subject is made, which is completed with the respective practical component. In the tutorial classes, the main points of the program are discussed, as well as guiding students to carry out practical cases.

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18. Course Unit Program

Chapter I - Multiple Linear Regression Model (MRLM)
1.1. Introduction: Motivation
1.2. Assumptions of Multiple Linear Regression.
1.3. Ordinary Least Squares (OLS).
1.4. Properties of least squares estimators.
1.5. Non-linear but linearizable functions: Functional Forms of Regression Models.
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 Prediction
2.1. Testing the overall significance of Regression (F-Test).
2.2. Hypothesis tests on coefficients (t-ratios).
2.3. Test on a subset group of parameters.
2.4. Linear constraints on coefficients ? Tests.
2.5. Confidence intervals for regression parameters.
2.6. Forecast and forecast confidence intervals.
Chapter III - Permanence of structure and dummy variables.
3.1. Introduction.
3.2. Testing for Structural or Parameter Stability of Regression Models: The Chow Test
3.3. Explanatory auxiliary dummy variable. Definition and use.
3.4. Dummy Variable Regression Models.
Chapter IV - Violation of the MRLM assumptions: Detection and correction
4.1. Introduction
4.2. Heteroscedasticity and normality
4.3. Autocorrelation

19. Assessment Methods

The continuous assessment score results from the weighted average of two tests to be carried out (50% each).

20. Didactic Resources

The exposition of the program themes will be done using Power-Point and software that allows econometric modelling.

21. Sustainability Objectives

During the curricular unit, the work methodology will take into account the sustainable development objectives, with emphasis on objective 4, seeking to ensure inclusive and quality education for all, and for objective 8, promote inclusive and sustainable economic growth, full and productive employment and decent work for all.

22. Keywords

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Resultados da tradução
Resultado de tradução
Econometrics
Linear Regression Model

23. Main Bibliography

Author(s): GUJARATI, Damodar and PORTER, Dawn
Title: Basic Econometrics
Edition: 5.ª Year: 2010
Local:
Publisher: McGraw-Hill

Author(s): WOOLDRIDGE, Jeffrey
Title: Introductory Econometrics: A Modern Approach
Edition: 7.ª Year: 2019
Local:
Publisher: Cengage Learning

Author(s): STEWART, Jon and GILL, Len
Title: Econometrics
Edition: 2.ª Year: 1998
Local:
Publisher: Prentice Hall

24. Complementary Bibliography

Author(s):
Title:
Edition: Year:
Local:
Publisher:

Author(s):
Title:
Edition: Year:
Local:
Publisher:

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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'ECONOMETRIA': Academic Year 2023/2024
Autor / Author	Prof. Doutor HELDER MANUEL GOMES DOS REIS
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Colaborador(es) / Colaborator(s)	-
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