



UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Data Analysis

Academic Year 2023/2024

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

Sport Organization Management

3. Cycle

1st

4. Course Unit

Data Analysis (C1108)

5. Scientific Area

6. Curricular Year

1st

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. Doutora CRISTINA MARIA FERNANDES NUNES

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

Introduction of students to the methods of applied economic analysis.

Introduction of descriptive statistics concepts.

Introduction of students in research techniques and information processing.

15. Specific Objectives

Knowledge of the fundamental characteristics of economic and business variables.

Knowledge of the fundamental characteristics of economic and business information of a quantitative nature.

Acquisition of exploratory analysis methods for statistical data that synthesize information.

Knowledge of the most relevant sources of information for carrying out empirical work.

16. Skills to be acquired

Teaching is centered on solving applications, that is, on developing skills to solve data analysis problems in economics and business sciences, through a systematic resolution methodology: How to present the problem in quantitative terms? What are useful concepts? Are the validity conditions checked? How to manipulate the concepts? What is the answer to the problem? The course is based on a good understanding of the methods and training in the application conditions.



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17. Teaching Methodology

Theoretical-practical classes (the professor introduces the concepts through an application and deduces the abstract aspects); tutorial classes (the teacher presents the applications to the students and with their active participation a solution is sought).

18. Course Unit Program

CHAPTER 1 - RATES OF CHANGE AND INDEX NUMBERS.

- 1.1. Variation rates.
- 1.2. Simple index numbers.
- 1.3. Aggregate, or composite, index numbers.
- 1.4. Nominal and real variables and price indices.

CHAPTER 2 - DESCRIPTIVE STATISTICS. EXPLORATORY DATA ANALYSIS.

- 2.1. Qualitative and quantitative data. Discrete and continuous variables.
- 2.2. Tabulation and graphical representation of data.
 - 2.2.1. Tabular and graphical representation of qualitative data: frequency table, bar diagram, circular diagram.
 - 2.2.2. Tabular and graphical representation of discrete quantitative data: frequency table, dot graphs, bar diagram, cumulative frequency function.
 - 2.2.3. Tabular and graphical representation of continuous quantitative data: frequency table, histogram, frequency polygon.
- 2.3. Location and dispersion measures.
 - 2.3.1. Location measures: arithmetic mean, weighted mean, geometric mean and harmonic mean. Fashion. Properties.
 - 2.3.2. Dispersion measures: amplitude, mean absolute deviation, variance, standard deviation and coefficient of variation. Properties.
- 2.4. Data sorting. Stem-and-leaf diagram.
- 2.5. Median. Quartile, decile, percentile, quantile.
- 2.6. Shape parameters. Coefficients of asymmetry and flatness.
- 2.7. Diagram of extremes and quartiles. Sample comparison. Outliers.
- 2.8. Concentration measures. Gini index and Lorenz curve.

CHAPTER 3 - CORRELATION AND REGRESSION.

- 3.1. Scatter diagrams.
- 3.2. Covariance.
- 3.3. Standardization of a sample.
- 3.4. Linear correlation coefficient.
- 3.5. Simple linear regression.

19. Assessment Methods

Work carried out throughout the semester.
Conducting two assessment tests.



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20. Didactic Resources

Various notes and exercises available online on the teacher's website.

21. Sustainability Objectives

Reduction of the ecological footprint, all documents are online in Moodle, without the need for printing.

22. Keywords

Sample
Population
Average
variance
Correlation
Regression
index numbers



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23. Main Bibliography

Author(s): ST. AUBYN, A. e VENES, N.
Title: ANÁLISE DE DADOS - APLICAÇÕES ÀS CIÊNCIAS ECONÓMICAS E EMPRESARIAIS
Edition: 1ª Year: 2011
Local: Lisboa
Publisher: Verlag Dashöfer

Author(s): NEGAS, E.
Title: ESTATÍSTICA DESCRITIVA
Edition: 2ª Year: 2021
Local: Lisboa
Publisher: Sílabo

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

24. Complementary Bibliography

Author(s): Chaves, C., Maciel, E., Guimarães, P. e Ribeiro J.C.
Title: Instrumentos Estatísticos de Apoio à Economia: Conceitos Básicos
Edition: 1ª Year: 1999
Local: Lisboa
Publisher: McGraw-Hill de Portugal

Author(s): Silvestre, A. L.
Title: Análise de Dados e Estatística Descritiva
Edition: 1ª Year: 2007
Local: Lisboa
Publisher: Escolar Editora



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