UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Statistics

Academic Year 2025/2026

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

Marketing

3. Cycle

1st

4. Course Unit

Statistics (V1016)

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. Doutora CRISTINA MARIA FERNANDES NUNES

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

Apply statistical analysis techniques in solving specific problems in the fields of Marketing and Management.
Present the basic methods of statistical analysis, focusing on the close connection between sample and population.

15. Specific Objectives

Statistics is the science that allows comparing sample data with theory (sets of abstract hypotheses about population parameters). Probability Theory, the branch of Mathematics that allows describing and understanding random experiences, is the indispensable tool for measuring and controlling the uncertainties inherent in statistical reasoning.

16. Skills to be acquired

Teaching is centered on solving applications, that is, on developing problem-solving skills in economic and social sciences through a systematic resolution methodology. It is essential that students can reach a good level of understanding of statistical methods and the respective ability to apply them to concrete problems in the fields of marketing or management.

17. Teaching Methodology

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The teaching of this curricular unit will be based on three concrete methodologies:
Lectures of an expository nature, for the presentation of the theoretical elements of reference.
Participatory classes, with analysis and resolution of practical exercises, which can take place at the same time as the lectures.
Self-study related to the student's autonomous work, as included in the lesson planning (see syllabus). If possible, SPSS will be used.

18. Course Unit Program

1. PROBABILITY THEORY.
1.1. Concepts, algebra of events, axioms.
1.2. Conditional odds. Independence of events.
1.3. Total Probability Theorem and Bayes' Theorem.

2. RANDOM VARIABLES.
2.1. Concept.
2.2. One-dimensional VA probability and distribution functions.
2.3. Two-dimensional VA probability and distribution functions.
2.4. Parameters.

3. DISTRIBUTIONS OF DISCRETE AND CONTINUOUS RANDOM VARIABLES.
3.1. Uniform distribution.
3.2. Bernoulli distribution.
3.3. Binomial Distribution.
3.4. Poisson distribution;
3.5. Normal Distribution.

4. SAMPLING DISTRIBUTIONS.
4.1. Normal Distribution, Chi-Square, t-Student and F-Snedecor.
4.2. Sampling distributions of the most important statistics: Bernoulli populations and Normal populations.

5. INTRODUCTION TO STATISTICAL INFERENCE.
5.1. Point estimation.
5.2. Interval estimation: core variable method.

6. HYPOTHESES TESTS.
6.1. Formulation of hypotheses.
6.2. Errors and probabilities.
6.3. Power function.
6.4. Parametric hypothesis tests.

19. Assessment Methods

Access to continuous assessment depends on attending at least 70% of the classes taught (applies to both TP and OT classes). The process consists of carrying out two mandatory interim tests, with a weighting of 50% each.

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20. Didactic Resources

There are rooms equipped with computers with internet access, and with statistical software (R or SPSS), available for students who wish to further develop their knowledge of the subject.

21. Sustainability Objectives

The UC contributes to SDG 4 ? Quality education: develops quantitative literacy and data analysis skills, essential for basic training in marketing and management, to SDG 9 ? Industry, Innovation and Infrastructure: promotes the informed use of statistical methods and tools (R/SPSS) to support innovation and digital infrastructure and to SDG 12 ? Sustainable production and consumption: It encourages evidence-based decisions (data analysis) that favor efficiency and responsible practices.

22. Keywords

Probability
random variable
Probability distributions
Sample
Parameter estimation
Tests

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23. Main Bibliography

Author(s):	Murteira, B., C.S. Ribeiro, J. Andrade e Silva, C. Pimenta & F. Pimenta		
Title:	Introdução à Estatística		
Edition:	4ª	Year:	2023
Local:	Lisboa		
Publisher:	Escolar Editora		
ISBN Code:	9789725926031		

Author(s):	Morais, M.C.		
Title:	Probabilidades e Estatística		
Edition:	1ª	Year:	2020
Local:	Lisboa		
Publisher:	IST - Instituto Superior Técnico		
ISBN Code:	9789898481788		

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

24. Complementary Bibliography

Author(s):	Afonso, A. & Nunes, C.		
Title:	Probabilidades e Estatística - Aplicações e Soluções em SPSS		
Edition:		Year:	2019
Local:			
Publisher:	Universidade de Évora		
ISBN Code:	978-972-778-123-2		

Author(s):	Nunes, C.		
Title:	Probabilidades e Estatística		
Edition:	1ª	Year:	2022
Local:	Lisboa		
Publisher:	Escolar Editora		
ISBN Code:	9789725925928		

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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'ESTATÍSTICA': Academic Year 2025/2026
Autor / Author	Prof. Doutora CRISTINA MARIA FERNANDES NUNES
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