UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Statistics

Academic Year 2025/2026

1. Organic Unit

Institute of Psychology and Educational Sciences

2. Course

PSYCHOLOGY

3. Cycle

1st

4. Course Unit

Statistics (20309)

5. Scientific Area

6. Curricular Year

1st

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 VITOR ALEXANDRE BELO DE MOURA PEREIRA COELHO

12. Assistants

Prof. Doutora ANA DANIELA BARRETO ALEIXO

13. Teaching Language

Portuguese

14. General Objectives

This module is designed to help students developing skills in how to design and implement a research study, how to measure human
behaviour, and how to analyze and interpret data.
Throughout the semester, students will focus on research that involves examining group differences, particularly in experimental studies.

15. Specific Objectives

Identify, select and use techniques to analyze, report, and conclude from quantitative data, including inferential tests of correlation and association.Critically read psychological research (its design, analysis, and interpretation) which focuses on comparing differences between groups.
Understand how to measure and analyze behaviour, and understand strengths and limitations of different research methodologies.
Write the Method and Results sections of a study.

16. Skills to be acquired

Foster a positive attitude towards science
Understand the fundamentals of research in psychology
Analyze research by identifying the variables involved
Distinguish data analysis strategies according to the nature of psychological phenomena
Develop problem solving skills in data analysis in behavioural sciences
Decode a scientific paper, according to the steps of the scientific method

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17. Teaching Methodology

Classes are theoretical and practical, using the expository, interrogative and active method, with discussion of the themes and their practical implications, as well as the realization of practical exercises for application of knowledge. We will use pedagogical techniques that value peer collaboration and learning by guided discovery, by exploring statistical analysis software. Autonomy and critical thinking will be encouraged.

18. Course Unit Program

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1 Introduction to research designs and statistical data:
1.1 Data and statistics in Psychology
1.2 Measurement and research designs in Psychology

2. Describing and Synthesizing Data
2.1 Measurement and Distribution
2.2 Central Tendency
2.3 Variability in scores

3. Standardised values and the normal distribution
3.1 z-scores
3.2 Normal distribution

4. Experimental and quasi-experimental designs
4.1 Manipulation and control in experimental designs
4.2 Between and within-subjects experiments
4.3 Internal validity and interference variables
4.4 Required adaptation for quasi-experimental studies

5. Examining means and mean differences
5.1 Confidence intervals for the mean
5.2 Examining differences of means in experimental studies

6. Linear relationships part 1: Correlation
6.1 Identify and describe correlations
6.1.1 Scatter-plots and correlation coefficients
6.2. Introduction to inferential statistic
6.2.1 Hypothesis testing and statistical significance

7. Linear relationships part 2: Simple linear regression
7.1 Describing relationships between variables - the regression line
7.2 Applying regression analysis
7.3 Interpreting study outcomes

8. Between-group differences 1: One-sample and paired samples t-test
8.1 Inferential statistics
8.1.1 Testing the null hypothesis
8.1.2 Statistical inference and statistical significance
8.1.3 Statistical significance (p-value)
8.2 One sample t-test
8.3 Paired samples t-test

9. Between-Group Differences 2: t-test for independent samples

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9.1 Independent samples T-test
9.2 How to report mean differences

10. Alternatives to t-test
10.1 One sample z-test
10.2 Nonparametric tests
10.3 Confidence intervals for differences of means

19. Assessment Methods

According to the Regulamento Geral de Avaliação da Universidade Lusíada, students must sit:
A) Two written tests (60%)
B) Final written Exam (40%)

20. Didactic Resources

1. Powerpoints, databases and scientific articles
2. Computers and IBM SPSS software
3. Recommended readings

21. Sustainability Objectives

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

Target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development.

22. Keywords

Inferential Statistics
Hypothesis testing
Comparison of groups; experimental designs

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23. Main Bibliography

Author(s): Marôco, João
Title: Análise Estatística com o SPSS Statistics
Edition: 8ª Year: 2021
Local: Pêro Pinheiro
Publisher: Report Number - Análise e Gestão de Informação, Lda.
ISBN Code:

Author(s): Howell, David C.
Title: Fundamental Statistics for the Behavioral Sciences
Edition: 9ª Year: 2017
Local: Boston
Publisher: Cengage Learning
ISBN Code:

Author(s): Dancey, C. & Reidy, J.
Title: Statistics without maths for Psychology
Edition: 8th Year: 2020
Local:
Publisher: Pearson
ISBN Code:

24. Complementary Bibliography

Author(s): Gravetter, F.J. & Forzano, L-A. B.
Title: Research methods for the behavioral sciences
Edition: 6ª Year: 2019
Local: Boston
Publisher: Cengage Learning
ISBN Code:

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

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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'ESTATÍSTICA': Academic Year 2025/2026
Autor / Author	Prof. Doutor VITOR ALEXANDRE BELO DE MOURA PEREIRA COELHO
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Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
Data Hora / Date Time	
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