UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Data Analysis and Treatment

Academic Year 2026/2027

1. Organic Unit

Institute of Psychology and Educational Sciences

2. Course

PSYCHOLOGY

3. Cycle

1st

4. Course Unit

Data Analysis and Treatment (20305)

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. Doutor VITOR ALEXANDRE BELO DE MOURA PEREIRA COELHO

12. Assistants

Prof. Doutora JOANA MARTINS GONÇALVES LOPES

13. Teaching Language

Portuguese

14. General Objectives

This unit aims to develop critical knowledge and skills for students to become advanced consumers of research. The unit is designed to help students develop skills in designing and implementing research studies, to measure human behaviour, and how to analyze and interpret data. Furthermore, throughout the unit, students will focus on studying the relationship/ association between variables.

15. Specific Objectives

Critically read psychological research (its design, analysis, and interpretation).
Select and use techniques to analyze, report, and conclude from quantitative data, including inferential tests of correlation and association.
Understand how to measure and analyze behaviour, and understand strengths and limitations of different research methodologies.
To critically analyze the Method and Results sections of a study.

16. Skills to be acquired

Promote 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. Scientific research in Psychology
1.1 Psychological science
1.2 The scientific Method
1.3 Introduction to the structure of a scientific work

2. Introductory concepts of Statistics
2.1. Concept of subject
2.2. Concept of sample
2.3. Concept of population
2.4. Types of sampling
2.5. The measurement of behavior and assessment of measures
2.6. The measurement of attitudes and assessment of measures
2.7. Types of scales
2.7.1 Frequency scales
2.7.2 Agreement scales

3. Variables and their measurement
3.1. Distribution
3.1.1Normality, asymmetry and kurtosis
3.2. Measurement scales
3.3 Descriptive statistics
3.3.1. Central tendency measures (mode, mean and median) and non-central measures (maximum, minimum, quartiles and percentiles)
3.3.2. Measures of variability (range, interquartile range, standard deviation and variance)
3.3.3. Standardized values

4. Critical reading of an investigation
4.1 Decoding and critically reading scientific articles
4.2 Understanding the Method section
4.3 Understanding the Results section
4.4 Understanding research
4.4.1. External validity
4.4.2. Multiple causality

5. The use of IBM SPSS Statistics
5.1. Operations and basic commands
5.2. Constrution and manipulation of a data file
5.3. Introduction of variables and data
5.4. Defining variables
5.5. Introduction/edition of data
5.6. Searching and selecting cases and data
5.7. Transforming data and calculating variables
5.8. Recodiing data

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19. Assessment Methods

For those students who chose Assessment Regime A, as described it the Regulamento Geral de Avaliação da Universidade Lusíada, continuous assessment will be implemented through two oral intervention and one written test in the end of the semester. These elements will be complemented by a final test in the end of the semester for those students who are in the conditions described in the Regulamento mentioned above:

A) Class Presences (10%)
B) Two Oral Intervention (40%)
C) Written Test (50%)

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

Method
Scientific articles
Descriptive statistics
SPSS

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23. Main 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): Dancey, C. P. & Reidy, J.
Title: Statistics without maths for Psychology
Edition: 8ª Year: 2020
Local:
Publisher: Pearson
ISBN Code:

Author(s): Shaughnessy, J. J., Zechmeister E. B. & Zechmeister, J. S.
Title: Research Methods in Psychology
Edition: 10ª Year: 2014
Local: New York
Publisher: McGraw Hill
ISBN Code:

24. Complementary Bibliography

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):
Title:
Edition: Year:
Local:
Publisher:
ISBN Code:

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Ficha técnica MIP / MIP Datasheet	
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Autor / Author	Prof. Doutor VITOR ALEXANDRE BELO DE MOURA PEREIRA COELHO
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Colaborador(es) / Colaborator(s	-
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