COURSE UNIT INFORMATION SHEET (*SYLLABUS*)

2023/2024

Name

QUANTITATIVE DATA ANALYSIS METHODS

Teaching staff
(Also indicate the Professor in charge)

Magda Sofia Valadas Dominguez Roberto

ECTS

6

Functioning

3h per week of theoretical-practical classes (for 14 weeks)

Learning goals

To acquire knowledge on, and apply advanced statistical analysis techniques to explore and interpret complex models investigated in psychological research.

The content of the course unit addresses a set of interrelated modules of increasing complexity, that explore different advanced statistical analysis techniques, promoting the acquisition of statistical knowledge and skills in data analysis.

To present a wide range of data analyses techniques, allowing students to identify the most adequate ones to explore the goals of their research projects, while identifying the advantages, disadvantages and limitations of each one.

The bridging between theoretical and practical classes will be made through analysis and interpretation of problems with supported of R statistical software and its integrated development environment, RStudio.

Skills to be developed

1. Identify, apply and interpret advanced statistical analysis techniques addressing their assumptions.

2. Determine the importance of advanced multivariate data analysis techniques in psychological research.

3. Apply R programming language to solve problems and identify its advantages.

4. Critical interpretation of the results of statistical analysis.

5. Adequately report statistical results based on APA guidelines and ethical principles.

Prerequisites (precedences) *

Non-applicable

Contents

Bibliography

Cumming, G. (2012). *Understanding the new statistics: effect sizes, confidence intervals, and meta-analysis.* Routledge

Field, A., Miles, J., & Field, Z. (2012). *Discovering statistics using R.* SAGE Publications.

Hayes, A. (2013). *Introduction to mediation, moderation and conditional process analysis: A regression-based*

   approach. The Guilford Press.

Hox, J. (2002). *Multilevel analysis: techniques and applications.* Lawrence Erlbaum Associates, Publishers.

Raykov, T., & Marcoulides, G. A. (2006). *A first course in structural equation modeling.* Lawrence Erlbaum

   Associates, Publishers.

Teaching methods

Theoretical and practical, small groups and individual tasks using real data to explore psychological concepts. (analyses

with SPSS and R through its integrated environment RStudio)

Evaluation Regimes (General and/or Alternative)

 The unit's approval implies the sum given to the following evaluation elements:

 1. Individual report addressing an advanced statistical technique, including data analysis, interpretation and results.

 2. Critical analysis of a scientific paper using quantitative methods, namely its methodological dimension and the articulation

 between it, the hypotheses formulated, the results obtained and the proposed discussion.

 3. Participation in class activities.

Evaluation Elements

(Dates due, weights, minimum required grades)

 The weighted criteria is the following: a total of 12 values in the individual work, of 5 values in the critical analysis of a

 scientific paper and of 3 values in the participation in class activities. The final grade will be converted to: Approved and
 Non-Approved.

Rules for grade improvement

Grade improvement occurs only if the first elements of evaluation are carried out and take place through new individual
work.

Rules for students having previously failed the course unit *

Non-applicable

Requirements on attendance and punctuality

Class attendance is recommended.

Rules for special students

(workers, elite athletes, student body leaders, military, fathers/mothers, with special needs) *

General rules of the FPUL.

Language of instruction

Portuguese

Disciplinary violations and penalties

According to the Evaluation of Learning Regulation of the Faculty of Psychology of the University of Lisbon, the following behaviors are considered as disciplinary offenses subject to disciplinary action:

a) To use or attempt to use materials, information, notes, study resources or other objects and equipment not authorized in academic exercises;
b) To help or try to help a colleague in committing a disciplinary offense;

c) To submit the same written work for evaluation in different course units without permission from the instructors, even if with minor changes;

d) To present someone else's work as one's own;

e) To forge, or change without permission from the author, any information or citation in an academic work;

f)To interfere, change or attempt to change grades;

g) To try to prevent or interfere with the proper functioning of classes, research or other academic activities;

h) To make false accusations regarding instructors, governance bodies, other students or non-teaching staff of the FPUL;

i) To falsify signatures in attendance sheets, documents relating to evaluation elements or in any official document relating to an academic process or status.

Disciplinary offenses committed in any assessment element can lead to its annulment, and must be reported to the Pedagogical Council or, considering their gravity and repetition, may lead to other penalties, to be determined by the Rector of the University of Lisbon.

* If applicable