COURSE UNIT INFORMATION SHEET (*SYLLABUS*)

2022/2023

Study Program: Postgraduate Diploma in Data Analysis in Psychology

Name   **Introduction to Statistical Inference II**
Teaching staff   (Also indicate the Professor in charge)   ▪ **Ana Sousa Ferreira** (Professor in charge)
ECTS   ▪ 6 ECTS
Functioning   ▪ 18 hours/semester of Theorical-practical classes taught sequentially.
Learning goals   ▪ To provide students with the possibility of learning to perform and interpret statistical inference methodologies to compare two or more populations, which are more common in the field of Psychology.
Skills to develop   1. Understand and correctly use the notions of "significance" and "p-value";   2. Apply the principles of statistical inference, the procedure of hypothesis testing and confidence intervals to compare populations;   3. Correctly use statistical software's and know how to interpret its outputs.
Prerequisites (precedences) *   Not applicable.
Contents   **Continuation of the study of methods of Statistical Inference.**   1. Comparison of mean values. Two-Sample Study: Confidence Intervals for the Difference of

Mean Values. Hypothesis tests for the comparison of mean values. Inference for small samples. Inference in non-normal populations.

2. Analysis of Variance. Study of three or more independent samples: One-way analysis of variance. The Fisher-Snedecor distribution. A posteriori comparisons.

3. Measures of effect size.

Bibliography

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4ª ed.). Sage Publications.
- Howell, D.C. (2017). *Fundamental statistics for the behavioral sciences (9ª ed.).* Cengage Learning.
- Marôco, J. (2014). *Análise estatística com o SPSS statistics* (6ª ed). Report Number, ISBN: 9789899676343.
- Moore, D. S., Notz, I.N., Fligner, M.A. (2017). *The basic practice of statistics* (8ª ed.). W. H. Freeman and Company.
- Moore, D. S., Notz, W.I., Fligner, M.A. (2014). *A Estatística básica e a sua prática* (6ª ed.). LTC.

Teaching methods

Theoretical-Practical classes (15h TP + 3 OT): Introduction of concepts based on the analysis of examples of real data, oriented to the area of Psychology, with the use of masterly and dialogued exposition. Classes are guided by the principle of "learning by doing" and consists of the discussion and resolution of applied exercises with the support of statistical software's, intended to cement and complement the knowledge acquired.

Evaluation Regimes (General and/or Alternative)

Successfully completing the Postgraduate Diploma course is conditional on the realization of three mandatory evaluations elements:

1. Global approval on Learning control sheets in each curricular unit. These sheets are multiple choice sheets in a applied context with questions and random answers alternatives, and is performed in the *e-learning ULisboa* (*Moodle)* at the end of each c. u. (minimum grade of 9.5 values).

2. At the end of the first semester, an individual work that consists of a critical analysis of a scientific article, namely its methodological section and how the research hypothesis/objectives/questions are well articulated with the proposed data analysis strategy, the results obtained, and the discussion presented (minimum grade of 9.5 values).

3. At the end of the second semester, an individual work aimed at the application skills acquired in the various curricular units, applying advanced data analysis techniques, and including the analysis, interpretation and reporting of a set of data collected by application of a questionnaire.

Evaluation Elements (Dates due, weights, minimum required grades)

Approval in the **Postgraduate Diploma in Data Analysis in Psychology** requires obtaining a final weighted average (among the three assessment components) **greater than or equal to 9.5 values** among the following results:

1. **Average of the grades of all the Learning Control Sheets related to each curricular unit, with a weighting of 50% in the final grade;**
2. **Grade in the Critical analysis of a scientific article, with a weighting of 25% in the final grade;**
3. **Grade in the Individual Work with a weighting of 25% in the final grade.**

Rules for grade improvement

The grade improvement may only occur in the assessment elements performed individually.

Rules for students having previously failed the course unit

Not applicable.

Requirements on attendance and punctuality

Classes operate in a hybrid regime and punctuality and student participation in at least 2/3 of the total number of classes are assumed.

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 but English reading domain is necessary.

Disciplinary violations and penalties

Consult the "Regulamento Geral de Avaliação de Conhecimentos e Competências dos Alunos (RGACCA) (Capítulo IV)".

* If applicable