

ID	3489
Curricular Unit	Statistics I
Regent	Paula Marta Bruno
Learning Outcomes	The objectives of this course are: (i) To provide basic knowledge of probability and statistics; (ii) To introduce a statistical software (in case, the SPSS).

Syllabus

- Probability, conditional probability and independence

Brief overview

Total probability and Bayes' theorem

- Discrete models

Discrete random variable

Probability mass function

Distribution function

Population parameters

Pairs of random variables

Binomial distribution

Poisson distribution

- Continuous models

Probability density function

Continuous random variable

Distribution function

Population parameters

Exponential distribution

Normal distribution

Central limit theorem

Sampling distributions

- Introduction to the SPSS statistical software

Entering data

Level of measurement

Manipulation of variables

- Exploratory data analysis

Descriptive statistics measures

Graphical representations

Association between two variables

Practical applications with SPSS

- Introduction to statistical inference

Estimation

Hypothesis testing

- Statistical inference for single populations

Inference about the population mean

Inference about the population variance

Normality tests

Wilcoxon test for the population median

Practical applications with SPSS

Evaluation

The approval in the course is obtained with final score greater than or equal to 10 values. The assessment can be done in two ways: continuous assessment or a final exam.

Continuous assessment: two written tests, where the first test has a score of 7 values and the second test a score of 13 values. The minimum scores are 3 and 5 values, respectively. The final score is the sum (round to units) of the scores of each of the two tests (each of them round to decimals). If an approved student chooses to make final exam at the normal period, the classification attained in the continuous has no effect.

Assessment by final exam: a written exam carried out in a scholar period scheduled by the pedagogical board. The written exam includes a theoretical-practical component and a practical component, made at two different times. An oral exam is possible upon teachers approval, but only with a score greater than or equal to 9 values in the written exam.

Bibliography

Main:

Bruno, P., Carita, A., Diniz, A., Gonçalves, I., Teles, J. (2008). Introdução à Teoria das Probabilidades, Lisboa: Edições FMH.

Bruno, P., Carita, A., Diniz, A., Gonçalves, I., Teles, J. Tópicos de Estatística, manual não editado.

Complementary:

Afonso, A., Nunes, C. (2011). Estatística e Probabilidades - Aplicações e Soluções em SPSS, Lisboa: Escolar Editora

Marôco, J. (2014), Análise Estatística com o SPSS Statistics (6^a ed.), Lisboa: Report Number.

Murteira, B., Antunes, M. (2012). Probabilidades e Estatística, Volume I, Lisboa: Escolar Editora.

Pallant, J. (2007), SPSS - Survival Manual (3rd ed.), Glasgow: McGraw-Hill.

Paulino, C.D., Branco, J.A. (2005). Exercícios de Probabilidades e Estatística, Lisboa: Escolar Editora.

Pestana, D., e Velosa, S. (2006), Introdução à Probabilidade e à Estatística (Vol. I, 2^a ed.), Lisboa: Fundação Calouste Gulbenkian.