

ID 3895
Curricular Unit Statistics I

Regent
Learning
Outcomes

Paula Marta Bruno
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).

- 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.
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
Bibliography
Soluções em SPSS, Lisboa: Escolar Editora
Marôco, J. (2014), Análise Estatística com o SPSS Statistics (6a 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, 2a ed.), Lisboa: Fundação Calouste Gulbenkian.

