



Discipline Information

The following dates are in (dd/mm/yyyy) format.

Code: RAL5838 - 2 Type: POS
Name: Statistics Applied to Clinical Trials
Concentration area: Ciências da Saúde Aplicadas ao Aparelho Locomotor (17142)

Approval dates:

CCP: 17/02/2017 CPG: 30/05/2017 CoPGr: 16/08/2017

Activation date: 16/08/2017 Inactivation date:

Workload:

Total: 60 h Theory: 8 h Practice: 4 h Study: 3 h

Credits: 4 Duration: 4 weeks

Professors: 57845 - Luis Vicente Garcia - 16/08/2017 until today

Objectives:

To present to the student the basic concepts of General Statistics and discuss the main statistical tests used in clinical research, with emphasis on clinical trials.

Specific objectives

Enable postgraduate students to:

1. Indicate the statistical test to be used in different research protocols.
2. Apply the main statistical tests used in research protocols.

Rationale:

The indication and application of statistical tests are arduous tasks for the majority of the researchers who militate in the medical area. There are several reasons for this difficulty, including the doctor's aversion to math and the format of the course during the graduation period. This course aims to address the main aspects of statistics, focusing primarily on the indication of suitable tests for each type of protocol, avoiding to the maximum, treatment and mathematical jargon.

Content:

Theoretical classes

1. Description, exploitation and comparison of data
2. Notions of probabilidades
3. Descriptive Statistics
4. Presentation of Results: mean, median, standard deviation
5. Distribution of Probabilities



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6. Inferential Statistics
7. Estimates and sample sizes
8. Tests used to compare two samples
9. Tests used to compare more than two samples
10. Non-parametric tests
11. Correlation and regression

Bibliography:

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D'Agostino RB, Massaro JM, Sullivan LM. Non-inferiority trials: design concepts and issues - the encounters of academic consultants in statistics. *Stat Med* 2003;22:169–186.

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Goodman S. A dirty dozen: twelve p-value misconceptions. *Semin Hematol* 2008;45:135–140

Goodman S, Greenland S. Why most published research findings are false: problems in the analysis. *PLoS Med* 2007;4:e168

Greenland S, Senn SJ, Rothman KJet al. Statistical tests, P values, confidence intervals, and power: a guide to misinterpretations. *Eur J Epidemiol* 2016; 31: 337–350

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Matthews JNS, Altman DG, Campbell MJ, et al. Analysis of serial measurements in research. Br. Med J. 1990;300:230-235.

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Moore DS. Statistics, concepts and controversies. San Francisco: W.H. FREEMAN, 1979.

Petrie A. Medical statistics at a glance/ Aviva Petrie, Caroline Sabin. 2 ed. Blackweel, 2005.

Robertson T, Wright FT, Dykstra RL. Order restricted statistical inference. New York, John Wiley & Sons, 1988, pp. 1-40.

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Schultz KF, Grimes DA. Blinding in randomized trials: hiding who go what. Lancet 2002;359:696-700

Siegel S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill.

Soares JF, Siqueira AL. Introdução à Estatística Médica. Coopmed – Editora Médica

Triola M. Introdução à Estatística. LTC Editora (Livros Técnico Científicos)

Vieira S, Hossne WS. Metodologia Científica para a área de Saúde. Editora Campus

Type of Assessment:

Seminars

1. Defining the Sample Size
2. Which test to use in the different protocols: discussion of projects of students enrolled

Practical classes

Note:

A disciplina poderá ser ministrada em português e/ou inglês.