INSTITUTO POLITÉCNICO DE BRAGANÇA

Course Unit	Experimental planning			Field of study	Pharmacy/Biomathematics, Biostatistics and Bioinformatics
	Counseling and Information on Pharmacy			School	School of Health
Academic Year	2014/2015	Year of study	1	Level	ECTS credits 4.0
Type	Semestral	Semester	2	Code	3238-493-1203-00-14

Workload (hours)	108	Contact hours	T -	TP 30	PL -	TC -	S -	E -	OT -	O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Luís Filipe de Sousa Teixeira Nunes

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Apply methods for collecting, analysing and processing quantitative and qualitative data.
2. Elaborate and understand the rules to construct a questionnaire.
3. Analyze and interpret the results of applying univariate and multivariate statistical methods using appropriate statistical software.
4. Interpret, formalize and solve problems at organizational level besed on statistical instruments and tools and tools for data analysis.
5. Develop logical, critical and analytical thinking in a creative way.

Prerequisites

Before the course unit the learner is expected to be able to:
Have knowledge of basic statistical concepts and computer user's perspective.

Course contents

Research methodologies; T-tests for means and the corresponding non-parametric tests; Tests on counts and proportions; Univariate analysis of variance; Scales and factor analysis.

Course contents (extended version)

1. Methodologies in research
   - Identifying the research topic
   - Identifying the variables to be studied
   - Identifying the population and the study sample
   - Planning the collection and analysis of the data
   - Interpreting the results
2. T-tests and the corresponding non-parametric tests
3. Tests on counts and proportions
4. Univariate analysis of variance (One-Way ANOVA) and the Kruskal-Wallis test
5. Scales and Factor analysis
6. Critical analysis of research papers

Recommended reading

1. Marôco, J. , 2011. Análise Estatística com o SPSS Statistics, ReportNumber.
2. Pestana, H. , Gageiro, J. , 2008. Análise de Dados para Ciências Sociais - A complementaridade do SPSS, 5ª edição, Sílabo.
3. A. Afifi, S. May, V. A. Clark, 2012. Practical Multivariate Analysis, 5th edition, Chapman & Hall/CRC.
4. J. F. Hair, W. C. Black, Babin, B. J. , and R. E. Anderson, 2010. Multivariate Data Analysis, Prentice Hall, 7th edition.
5. Dawson-Saunders B. , Trapp, G. , 2004. Basic and Clinical Biostatistics. Fourth Edition. Prentice-Hall International.

Teaching and learning methods

Expository methods for the presentation of theoretical concepts, examples and case studies, using multimedia support. Practical sessions with applied exercises using statistical software (SPSS) and interpretation of results. Discussion and critical analysis of results

Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
   - Practical Work - 60% (Practical work)
   - Final Written Exam - 40% (Final written exam.)
2. Alternative 2 - (Regular, Student Worker) (Final, Supplementary, Special)
   - Final Written Exam - 100% (Final written exam.)

Language of instruction

1. Portuguese
2. Portuguese, with additional English support for foreign students.

Electronic validation

Luís Filipe de Sousa Teixeira Nunes	Olívia Rodrigues Pereira	Maria Helena Pimentel
10-11-2014	18-11-2014	19-11-2014

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