

<b>Course:</b>	L025 - Food Quality and Nutrition
<b>Degree:</b>	Bachelor
<b>Curriculum Unit:</b>	9000006 - Statistical Methods and Computer Technology
<b>Scientific field:</b>	Mathematics and Computer Sciences
<b>ECTS<sup>(*)</sup>:</b>	5
<b>Curriculum year:</b>	1st
<b>Curriculum semester:</b>	2nd
<b>Frequency Regime:</b>	Mandatory
<b>Teacher(s):</b>	Carlota Maria Carvalho Lemos
<b>Contact hours <sup>(**)</sup>:</b>	T - 30; TP - 30
<b>Total work time (hours):</b>	138

(\*) - ECTS - European Credit Transfer and Accumulation System

(\*\*) – T- Theoretical; TP- Theoretical/Practical; LP- Lab Practice; S- Seminars; I- Internships; TU - Tutorials; O- Other (Evaluations)

## Objectives / Competences

It is intended that students should be able to:

- use, consciously, the techniques of collecting, compiling, analyzing and interpreting data.
- understand and know how to manipulate the probability distributions and hypothesis testing, making the choice and their interpretation correctly.
- Apply all the concepts taught in the resolution of practical exercises and express, orally and by writing, with precision and rigor content of language, the thoughts and reasoning engaged.
- use SPSS software, not only in processes of data analysis which includes the definition and introduction, modification and statistical analysis, and presentation of results, but also automating procedures.
- use tools and advanced automation for Microsoft Excel, potentiating the efficiency of spreadsheets in a professional environment.
- Understand the functioning of key services and Internet tools.
- Organize and create Web pages using HTML and CSS

## Syllabus

Statistical Methods:

1. Descriptive statistics (brief summary)
2. Simple linear regression
3. Discrete and Continuous Random Variables
4. Theoretical probability distributions: Bernoulli, Binomial, the Normal, the Chi-squared and the Student t
5. Introduction to Sampling
6. Confidence Intervals

## 7. Hypothesis testing

### Informatics:

#### 1. Microsoft Excel:

##### 1.1. Formatting the Spreadsheet

##### 1.2. Notions of calculus

##### 1.3. Mathematic and Statistics Analysis

##### 1.4. Building scenarios and Simulation Data

##### 1.5. Graphical Analysis

##### 1.6. Data Analysis

##### 1.7. Macros

#### 2. Programming

##### 2.1. With SPSS Syntax and Macros

##### 2.2. Visual Basic for Applications(VBA) for Excel

#### 3. Internet Technologies

##### 3.1. General aspects of Networks

##### 3.2. Major internet services

##### 3.3. Web 2.0

##### 3.4. HTML (Hypertext Markup Language)

##### 3.5. CSS (Cascading Style Sheets)

### Teaching methodologies and evaluation criteria

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Expositive method of the syllabus combined with the active method, resorting to the resolution of problems and exercises which concretize the themes developed, in a way, that formation focuses on student participation and in learning based on solving exercises and problem.

Assessment is based on measuring the acquisition and understanding of knowledges and in measuring of skills development.

The evaluation will consist in making a written test: frequency (continuous assessment) and/or final exam in the periods respective, complemented by small practical works performed during the class period, such as problem solving, preparation and presentation of papers, among others.

### Short bibliography

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COELHO, P. 2007. Como Criar Páginas Web Depressa & Bem - 2ª Edição Actualizada. FCA - Editora de Informática

COELHO, P. 2001. HTML 4 & XHTML - Curso Completo, FCA - Editora de Informática

LOUREIRO, H. (2007). Excel 2007 Macros & VBA - Curso Completo. FCA - Editora de Informática

MONTEIRO, E., BOAVIDA, F. 2003. Engenharia de Redes Informáticas, FCA - Editora de Informática

MONTGOMERY, D.; RUNGER, G. 2006. Applied Statistics and Probability for Engineers. 4th Ed. John Wiley

MURTEIRA, B., 1999, Probabilidades e Estatística. vol. I e II. McGraw-Hill

PEREIRA, A., 2006, Guia prático de utilização do SPSS. Edições Sílabo

PESTANA, M., GAGEIRO, J. 1998. Análise de dados para Ciências Sociais: A complementaridade do SPSS. Edições Sílabo

SOUSA, M.J. 2008. Domine a 110 % Excel 2007. 1ª edição. FCA - Editora de Informática