

## FUC - Ficha de Unidade Curricular

### Curricular Unit's File

<b>Code</b>	L0119
<b>Name (PT)</b>	Estatística I
<b>Name (EN)</b>	Statistics I
<b>Regime</b>	Semestral
<b>Level</b>	1.º Ciclo
<b>Teaching language</b>	Português , Inglês
<b>School</b>	Escola de Gestão (EG)
<b>Department</b>	DMQGE
<b>Scientific area</b>	Estatística e Análise de Dados (EAD)
<b>Responsible academic staff</b>	Maria da Conceição Torres Figueiredo
<b>Pre-requisites</b>	None
<b>Objectives</b>	The main purpose of this course is to enable students to know the most important inferential statistical methods and being to identify and apply the adequate method to each specific real situation in business and institutional environments, with the help of statistical software.
<b>Learning outcomes</b>	At the end of this learning unit's term, the student must be able to: 1. Know and use the main concepts of descriptive statistics, probabilities, random variable and statistical functions and associated parameters. 2. Know how to apply descriptive statistical methods and interpret their results. 3. Know how to calculate probabilities and its application to decision making in management. 4. Know the most important theoretical probability distributions and how to calculate the respective probabilities. 5. Know the most important sampling theoretical distributions. 6. Know how to interpret SPSS outputs from the application of descriptive statistical methods.
<b>Syllabus</b>	1 - Descriptive statistics 1.1 Basic concepts. 1.2 Frequency distributions. 1.3 Measures of central tendency and of absolute and relative dispersion. 2 - Probability theory. 2.1 Probability concepts. Axioms and theorems. 2.2 Conditional probabilities. 2.3 Independent events. 2.4 Bayes Theorem. 3 - Random variables. 3.1 Concept of random variables. 3.2 Probability and distribution functions. 3.3 Parameters. 4 - Distributions of discrete variables: 4.1 Uniform 4.2 Bernoulli 4.3 Binomial 4.4 Geometric, hypergeometric and negative binomial 4.5 Poisson. 5 - Distributions of continuous variables: 5.1 Uniform 5.2 Exponential 5.3 Normal 6 - Sample distributions 6.1 Central limit theorem 6.2 Theoretical sample distributions 6.2.1 Normal distribution 6.2.2 Chi-square, t-Student and F-Snedecor 7. Sampling: Bernoulli and normal populations. 8. Using SPSS for analysis and interpretation of results of descriptive statistics.

<b>Assessment</b>	<p>Continuous assessment: 2 written tests (40% each); group (3-4 elements) coursework (20%) with oral discussion if necessary. Delivered by e-learning with a paper copy; attendance of at least 80% of classes; average grade at least 10, not lower than 8 in any test; students with grades higher than 17 will be subject to oral exam to defend their grades.</p> <p>Final exam: Students with a grade of 10 or more get approval. Grades higher than 17 will be subject to oral exam.</p>
<b>Teaching methodology</b>	<p>Each student should acquire analytical information gathering, written and oral communication skills. To acquire these skills the following learning methodologies (LM) will be used:</p> <ol style="list-style-type: none"> <li>1. Expository, to the presentation of the theoretical reference frames</li> <li>2. Participative, with resolution of exercises</li> <li>3. Active, with the realization of individual and group courseworks</li> <li>4. Experimental with computer real applications.</li> <li>5. Self-study, related with autonomous work by the student.</li> </ol>
<b>Demonstration of the syllabus coherence with the curricular unit's objectives</b>	<p>This "demonstration of consistency" stems from the interconnection of the syllabus (S) with learning goals (LG) and is explained as follows:</p> <p>LG1 - S1 to S6.          LG2 - S1 and S8.          LG3 - S2.          LG4 - S3 to S6.          LG5 - S7.</p>
<b>Demonstration of the coherence between the teaching methodologies and the learning outcomes</b>	<p>The learning-teaching methodologies are aimed at the development of the students' main learning competences that allow to fulfill each of the learning goals, therefore, in the grid below, it is presented the main interlinks between the learning-teaching methodologies and the respective goals.</p> <p>Learning-Teaching Methodologies (LTM) - Learning Goal (LG)</p> <ol style="list-style-type: none"> <li>1. Expository, to the presentation of the theoretical reference frames - LG1 to LG4</li> <li>2. Participative, with analysis and resolution of application exercises - LG2 to LG4.</li> <li>3. Active, with the realization of individual and group courseworks - LG2 to LG5</li> <li>4. Experimental with real computer applications - LG5.</li> <li>5. Self-study, related with autonomous work by the student, as is contemplated in the Class Planning. - All Learning Goals</li> </ol>
<b>Main Bibliography</b>	
<b>Complementary Bibliography</b>	