School of Technology and Management
Course Unit Syllabus

Level of qualification:
First cycle (EQF level 6) - Bachelor
Study cycle:
Business and Management

Course Unit: **9152318; 9994318** – **Probability and Statistics**

Year 2 **Semester 3** **ISCED Code: 462** **ECTS: 6,0**

Tipe of Course Unit: Compulsory **Delivery Mode:** Face-to-face **Language of Instruction:** Portuguese

COURSE COORDINATOR: Luis Domingues

HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
150		**60**							**90**

Prerequisites (if applicable):

LEARNING OUTCOMES (knowledge, skills and competence)

- Understand the role of statistical analysis in decision-making and the extent of the associated risk;

- Acquire basic knowledge in statistics that enable students to analyze and interpret data sets;

- Identify shortcomings of statistical methods;

- Understand and analyze results;

- Acquire the basic knowledge which, within the framework of Classical Statistical Inference, could contribute to resolving some of their professional problems, in particular, through the use of statistical methods that provide a better decision-making.

CONTENTS

1. Descriptive Statistics
2. Probability
3. Counting Techniques
4. Random Variables
5. Special Distributions
6. Statistical Inference
7. Linear Regression
8. Hypothesis tests.

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

In this course, the students will get the basics of some of the main techniques and methodologies of Probabilities and Statistics, so that they developed the analytical and reasoning skills that enabling them to design and implement solutions for different problems, use the right tools to resolve their issues and be able to interpret the results obtained.

TEACHING METHODOLOGIES

Lessons with alternating expository component - which describe and exemplify the concepts, methods and statistical techniques - and practical component which resolve exercises to applied the methods and statistical techniques.In recent decades, the teaching of Probability and Statistics has been to incorporate, in a way, rising to the level of initial training of different professionals, not only for its instrumental character, but, above all, by the value added that the development of statistical

reasoning has in society, characterized by the increasing availability of information, and the need to make decisions in uncertain environments. In this logic, it is important that these future professionals hold the knowledge of the techniques and procedures that connected this area of knowledge and where the practical component takes a leading role.

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

In recent decades, the teaching of Probability and Statistics has been to incorporate, in a way, rising to the level of initial training of different professionals, not only for its instrumental character, but, above all, by the value added that the development of statistical reasoning has in society, characterized by the increasing availability of information, and the need to make decisions in uncertain environments. In this logic, it is important that these future professionals hold the knowledge of the techniques and procedures that connected this area of knowledge and where the practical component takes a leading role.

EVALUATION METHODS

The evaluation shall consist of written individual tests, performed in the classroom.

MAIN BIBLIOGRAPHY

MEYER, P. L., Probabilidade, Aplicações à Estatística, Livros Técnicos.

SANTOS, Carla – Estatística Descritiva: Manual de auto-aprendizagem- 2ª edição , Lisboa. Edições Silabo.

Material de apoio, disponível na página do Moodle da unidade curricular.

Complementar:

BORJA SANTOS, F., Cálculo de Probabilidades, Plátano Editora.

FONSECA, J. Simon & MARTINS, G. de Andrade, Curso de Estatística, Atlas.

GALVÃO de MELO, F., Probabilidades e Estatística, Volumes 1 e 2, Escolar Editora.

LARSON, Harold J., Introduction to Probability Theory and Statistical Inference, John Wiley & Sons.

MURTEIRA, B. J. F., Muller e D. A; Turkman, K. F. (1993), Análise de Sucessões Cronológicas, McGraw-Hill, Lisboa.

MURTEIRA, Bento J. F.(1993), Análise Exploratória de Dados – Estatística Descritiva, McGraw-Hill.

OLIVEIRA, J. Tiago (1990), Probabilidades e Estatística, McGraw-Hill.

WOOLDRIDGE, J.M. (2003) - Introductory Econometrics: A Modern Approach, South Western Publishers.

Year of implementation: 2019/2020 | Date of approval by the Technical-Scientific Board: 2015-09-01