

# Bachelor Degree in Business Administration and Management and Business Transformation

**Course:** Fundamentals of statistics

**Materia:** Statistics

**Credits:** 6 ECTS

**Program:** Bachelor

**Modality:** On-Site

**Year:** First

**Semester:** Second

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## 2. Presentation

### 2.1 Description

The subject of Statistics I, which is taught in the first four months of the second year of the Degree in Administration, is the first subject of the subject of statistics.

This subject aims to train future managers and directors so that they can contribute through a specialized management practice to the economic and social development of companies, understanding that statistics is a fundamental issue for the analysis of numerical data.

The basic concepts of descriptive statistics and probability will be discussed, which will form the basis, both for the study of inferential or inductive statistics, necessary to undertake Statistics II, and for other subjects such as financial mathematics, Microeconomics, Macroeconomics or Business Management. This subject will provide students with the basic skills necessary to understand the subjects in which random phenomena play an important role.

The topic is divided into two fundamental parts: descriptive analysis and probability. Students will learn descriptive analysis of variables and statistical data, both one-dimensional and multidimensional. Explain regression techniques and explore topics of special interest in the field of economics. The aim of studying probability theory is to provide the student with tools to work in an environment of uncertainty. The student will acquire knowledge about probability theory and models, both one-dimensional and multidimensional.

### 2.2 Relevant professional applications

The student will understand that Statistics does not represent a topic in itself, but should be understood as a tool to be used later in other fields (quality control, market studies, etc.), a tool with which you can analyze different cases and make appropriate professional decisions.

### 3. Learning outcomes of the degree

- RAT6 - The graduate will be able to understand the different data analysis techniques used to assess the feasibility of a business project.
- RAT9 - The student will be able to provide clear and precise explanations of any knowledge/information, both orally and in writing, in Catalan, Spanish and a third language, particularly English.
- RAT10 - The student will be able to apply digital technologies (at the right time) in his/her field of expertise.
- RAT12 - The graduate will be able to develop both traditional and digital marketing and promotional projects in a business environment.
- RAT13 - The graduate will be able to analyze the economic operations of companies, which have been carried out in the financial markets.
- RAT14 - The graduate will be able to apply in an effective way the principles of quality management and continuous improvement of organizations by means of a simulation of the implementation of a quality system in a company.
- RAT16 - The graduate will be able to understand the economic-financial information of business entities and institutions in relation to their environment.
- RAT18 - The student will be able to provide innovative, creative and entrepreneurial solutions in professional situations.
- RAT19 - The student will be able to evaluate the sustainability and social impact of the proposals presented, with ethical, environmental and professional responsibility.
- RAT20 - The student will be able to apply the gender perspective in the professional tasks
- RAT21 - The graduate will be able to verify the economic-financial information of business organizations and institutions with regard to their environment, by analyzing the companies' profit and loss accounts.
- RAT24 - After completing the degree, the student will be able to design projects for IT services and systems in all business fields.

### 4. Learning outcomes of the subjects

- RAM1 - The student will be able to clearly describe the fundamental concepts related to descriptive, mathematical and inferential statistics.
- RAM2 - The student will be able to correctly solve exercises and problems in which statistical methods, techniques and procedures are applied.
- RAM5 - The student will be able to correctly identify a problem, its relevant data and possible causes.
- RAM7 - The student will be able to clearly restructure the available information according to the objectives.

## 5. Contents

This subject aims to train future managers and directors so that they can contribute through a specialized management practice to the economic and social development of companies, understanding that statistics is a fundamental topic for the analysis of numerical data that helps in the decision-making of companies in search of transformation and expansion. The subject will deal with topics such as:

- Creation of databases and graphical representations
- Central trend measures: arithmetic mean, geometric mean, weighted mean and median.
- Dispersion measures: range, variance and type deviation
- Position measurements: quartiles (Q1, Q2, Q3) and percentiles
- Generic discrete distributions: calculation function of probability, hope and variance
- Known discrete distributions: Bernoulli, Binomial and Poisson
- Generic continuous distributions: calculation function density, hope and variance
- Known continuous distributions: Normal Law, t-student and F-Snedecor
- Estimation and inference: Confidence intervals
- Tests of Hypothesis
- Application through examples and exercises of Corporate Social Responsibility to ensure a better sustainable community and continuity in awareness of its importance.

## 6. Metodology

Learning outcomes developed	Teaching methodology	Training activities
Knowledge	Master class	Teacher's presentations
	Instructional sessions	Student's presentations
	Tutoring	Meetings for the resolution of doubts
	Learning based on readings	Reading and analysis of documents
Skill	Learning based on projects	Problem solving
	Learning based on audio-visual	Audiovisual analysis
	Case-based learning	Search and processing of information. Problem solving

Competence	Project-based work	Reporting Submissions of reports or papers
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## 7. Evaluation

Evaluation system	Weight
Continuous evaluation: exercises, problems, reporting, papers, case studies	40 %
Mid-term exam	20 %
Final exam	40 %

When computing the final grade, the on-going activities (participation, in-class quizzes, seminar cases and group projects, midterm exam) will be weighted only if the final exam grade is equal to or greater than 4.0. Therefore, to obtain a passing course grade, the final exam grade must be equal to or greater than 4.0. If the final exam grade is less than 4.0, the final exam grade becomes the final course grade, irrespective of the other grades. Students must take the final exam if they want to receive a quantitative course evaluation. Students who do not sit the final exam will receive a "No Show" overall course grade.

"The maximum grade that students may obtain on the revaluation tests [...] shall be 5,0. In addition, "the grade of the revaluation tests will, in any case, constitute the final grade of the subject". **Thus, only those students who having completed the partial exam, the final exam and have completed 100% of the activities of continuous assessment of the subject, are suspended (final grade of the subject less than 5) will be entitled to the exam.**"

**Single Evaluation:** The single assessment consists of a single examination equivalent to 100% of the grade of the subject. The exam, and therefore the subject, is passed with a grade of 5 out of 10 in this final test.

To benefit from the single assessment, it is necessary to send the teacher a written request during the first 15 working days of the course.

## 8. Bibliography

### 8.1 Basic Bibliography

- Anderson D., Sweeney D., Williams T., Estadística para administración y economía – 10ª edición, Editorial Cengage Learning (2021). ISBN 10: 9686034102 / ISBN 13: 9789686034103

### 8.2 Complementary Bibliography

- Casas J.M., Cortiñas P., Zamora, A.I. Estadística y economía empresarial. Editorial Ramón Areces (2011). ISBN: 978-84-9961-005-4.
- Hogg R., McKean J., Allen T.Late, C., Introduction to Mathematical Statistics, Global Edition, 8th Edition, Editorial: Pearson (2021). ISBN-10: 0134173058 / ISBN-13: 978-0134173054.
- Levine, D., Stephane D., Szabat, K.A. Statistics for Managers using Microsoft Excel - 8th Edition. Editorial: Preston (2018). ISBN-10: 0134173058 / ISBN-13: 978-0134173054.