



## COURSE DATA

### Data Subject

<b>Code</b>	35818
<b>Name</b>	Basic Statistics
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	6.0
<b>Academic year</b>	2024 - 2025

### Study (s)

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1313 - Degree in Business Management and Administration	Faculty of Economics	1	Second term
1330 - Degree in Business Management and Administration (Ontinyent)	Faculty of Economics	1	Second term
1921 - Double Degree Program BMA and Law	Faculty of Economics	1	Second term
1926 - Double Degree Program Tourism and BMA	Faculty of Economics	1	Second term

### Subject-matter

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1313 - Degree in Business Management and Administration	16 - Basic statistics	Basic Training
1330 - Degree in Business Management and Administration (Ontinyent)	16 - Estadística	Basic Training
1921 - Double Degree Program BMA and Law	1 - Year 1 compulsory subjects	Basic Training
1926 - Double Degree Program Tourism and BMA	1 - Asignaturas de formación básica de primer curso	Basic Training

### Coordination

<b>Name</b>	<b>Department</b>
BAEZA SAMPERE, ISMAEL	110 - Applied Economics



## SUMMARY

*Basic Statistics* is an introduction to Economic and Business Statistics. It is organized as a six-credit introductory course in statistics designed to provide students with the basic concepts and methods of statistical analysis.

The aim of the course is to familiarize students with methods of summarizing collections of measurements (data sets) of economic, business and, in general, social phenomena. Of particular concern will be the interpretation of summary statistics of data sets, the study of relationships between variables and an introduction to probability theory and its uses in the definition and characterization of random variables. A number of economic and business management applications will be used to illustrate the methods.

Throughout this course, students will learn many concepts, develop numerous skills, and gain new perspectives of events, observations, and data. The techniques and methods learned will help students in future courses, especially those in quantitative and analytical methods, and in solving real world problems.

## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

No prerequisites, although it is recommended to have taken and passed in math.

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 1313 - Degree in Business Management and Administration

- Demonstrate capacity for analysis and synthesis.
- Be able to analyse and search for information from different sources.
- Be able to solve problems.
- Be able to work in a team.
- Have critical and self-critical capacity.
- Manage time effectively.



- Be able to make decisions under certainty and uncertainty environments.
- Be able to apply analytical and mathematical methods for the analysis of economic and business problems.
- Be able to define, solve and present complex problems systemically.
- Be able to express oneself in formal, graphic and symbolic languages.
- Be able to plan, organise, control and evaluate the implementation of business strategies.
- Develop critical capacity on Spanish and international economic current affairs.
- Be able to analyse the economic situation and understand its implications.

### **LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

- Ability to recognize an economic problem from the observation of the economic reality.
- Use of basic quantitative tools and their application to the economic environment.
- Ability to choose a theoretical framework to analyse reality.
- Knowledge of the basic quantitative tools for the economic analysis, diagnosis and forecast, such as mathematics, statistics and econometrics.
- Identify, classify, argue and interpret the relations between economic variables.
- Search, choose and assess adequate information for the analysis of economic and business environments.
- Application of different analytical tools under uncertainty.

### **DESCRIPTION OF CONTENTS**

#### **1. Univariate data analysis**

- 1.Introduction
- 2.Univariate data: measures of central position, dispersion and shape
- 3.Measures of concentration

#### **2. Multivariate data analysis**

- 1.Multivariate data: joint and marginal frequency distributions
- 2.Mean vector and variance-covariance matrix
- 3.Relationship between variables



### 3. Regression

1. Introduction
2. Least squares regression
3. Goodness of fit

### 4. Time series models

1. Introduction
2. Economic indices
3. Time series

### 5. Univariate Probability Models

1. Introduction to probability theory
2. Random variable and probability distribution
3. Discrete and continuous random variables
4. Expected value and variance. Properties.

### 6. Specific Univariate Probability Models

1. Discrete models
2. Continuous models

### 7. Multivariate Probability Models

1. Introducción
2. Joint probability distributions, marginal probability distributions and conditional probability distributions
3. Mean vector and variance-covariance matrix
4. Independence. Correlation coefficient
5. Specific multivariate probability models

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Classroom practices	30,00	100
Attendance at events and external activities	0,00	0
Development of group work	0,00	0
Development of individual work	10,00	0
Study and independent work	20,00	0
Readings supplementary material	0,00	0
Preparation of evaluation activities	20,00	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	15,00	0
Resolution of online questionnaires	10,00	0
<b>TOTAL</b>	<b>150,00</b>	

**TEACHING METHODOLOGY**

Course time is split equally between lectures and computer lab work. Lectures cover the fundamentals of descriptive statistics and probability theory with special emphasis in developing the link to socio-economic and business applications. While the teaching method of lectures is “chalk and talk”, students’ participation and in-class discussion is encouraged.

Computer labs focus on presenting the students with practical examples and finding solutions to problems based on the application of (previously introduced) theoretical concepts. These sessions are based on three main teaching methods:

- *Project-based learning.* Students will choose a relevant topic and will analyze it applying descriptive statistics methods. You will be conducting some basic statistical procedures using MS-Excel, and will have to turn in a report of your output and write brief interpretations of it. More details will be given in advance.
- *Problem solving:* this consists of hand calculation, graph/table drawing, and writing short answers to problems or case studies in order to apply theoretical concepts.
- *Quizzes and review questions:* to check your understanding of assignments and lectures, I will give quizzes and review questions in some classes.

While project-based learning and problem solving may be done in a collaborative environment, quizzes and review questions will be based on individual work.



*Resolución de problemas:* su objetivo es complementar los conceptos estudiados en la sesión teórica aplicando éstos a la resolución de casos prácticos.

## EVALUATION

Grades are a weighted average of the results from a final exam and all computer lab assignments (see point 11 on methodology).

1. The weight of the final exam is 70% of the course grade. It will include practical problems to assess students' proficiency in the application of the core tools and concepts of the subject.
2. The remainder 30% of the final grade is the assessment of in-class projects, problems and quizzes. By their nature, these activities are **NOT RECOVERABLE**.

### IMPORTANT:

No student will get a positive assessment of the course (5 points or more) without passing the final exam. Students who fail the final exam will get a maximum final grade of 4.5 points.

A student might opt out of in-class assignments assessment. In this case his/her final grade will be totally based on the final exam, with a maximum value of 7 points out of 10.

## REFERENCES

### Basic

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- ESCUDER, R. y MURGUI, J.S. (2011). Estadística Aplicada. Economía y Ciencias Sociales. Tirant lo Blanch. Valencia, (2ª edición).
- ESTEBAN, J. y otros (2006). Estadística Descriptiva y nociones de probabilidad. Paraninfo, Madrid.
- MURGUI, J.S. y otros (2002). Ejercicios de Estadística. Economía y Ciencias Sociales. Valencia: Tirant lo Blanch.
- BEAMONTE, E. (2015). Apuntes de Estadística Básica. Grado en Administración y Dirección de Empresas. Reproexpres, S.L., Valencia
- Newbold,P.; Carlson,W.L.; Thorne, B. (2010): Statistics for business and economics, Pearson Education.



### Additional

- ANDERSON, D.R.; SWEENEY, D.J. y WILLIAMS, T.A. (2001). Estadística para Administración y Economía. Méjico International Thomson.
- BERENSON, M.L.; LEVINE, D.M y KREHBIEL, T.C. (2001) Estadística para Administración. Mejico Pearson-Prentice Hall
- DeGROOT, M.H. (1988). Probabilidad y Estadística. Wilmington: Addison-Wesley Iberoamericana Wilmington.
- HILDEBRAND, D.K. y OTT, R.L. (1997). Estadística aplicada a la Administración y a la Economía. Wilmington: Addison-Wesley Iberoamericana.
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- MONTIEL, A.M.; RIUS, F. y BARÓN F.J. (1997). Elementos básicos de Estadística Económica y Empresarial. Madrid Prentice Hall.
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